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Historia naturalis singular. regionum.
Magnae Britanniae 128.

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O U T L I N E S
O F T H E
N A T U R A L H I S T O R Y
O F
G R E A T B R I T A I N
A N D
I R E L A N D.

C O N T A I N I N G

A systematic Arrangement and concise Description of
all the Animals, Vegetables, and Fossiles which have
hitherto been discovered in these Kingdoms.

By JOHN BERKENHOUT, M. D.

I N T H R E E V O L U M E S.

V O L. I.

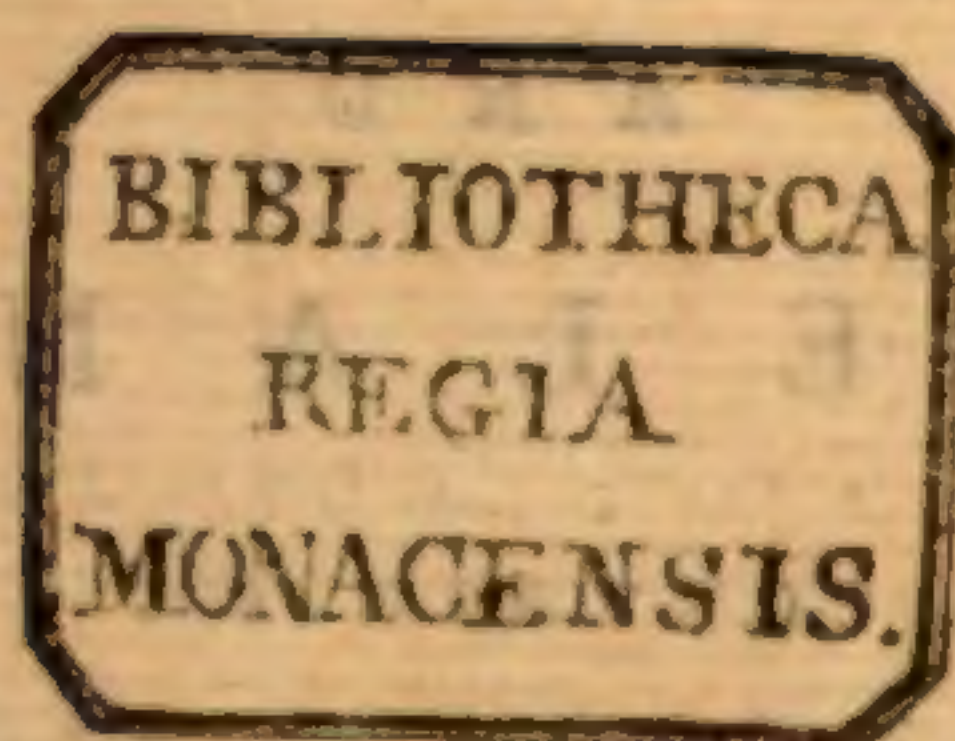
Comprehending the ANIMAL KINGDOM.

L O N D O N:

Printed for P. ELMSLY (Successor to Mr. VAILLANT)
facing Southampton-street, in the Strand.

M D C C L X I X.

O U T L I N E
O F
N A T U R A L H I S T O R Y
O F
G R E A T B R I T A I N



A System of Natural History, and
an Atlas of the British Islands, which
includes a description of the Kingdoms.

BY JOHN BERNARD, M.D.

IN THREE VOLUMES.

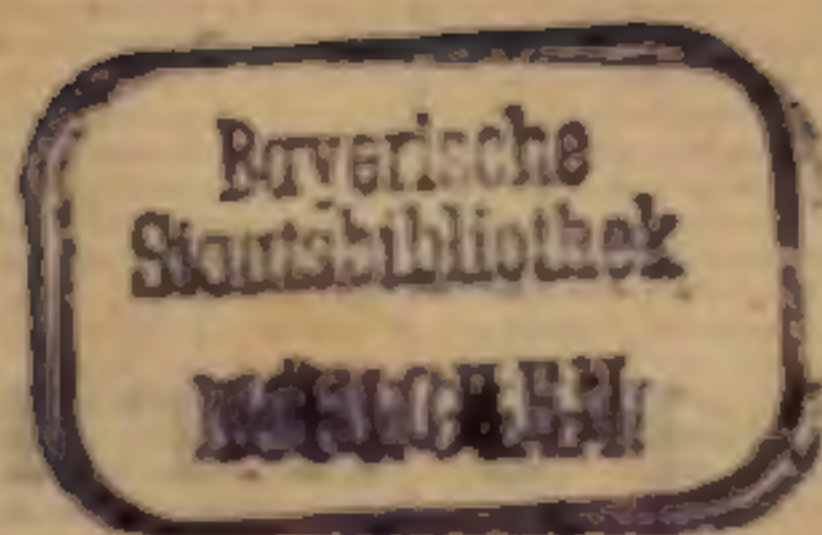
V O L I

Containing the Aves of the Kingdom.

L O N D O N :

Printed by J. B. (Successor to J. V.)
in the Strand, in the Strand.

M D C C L X X



TO
THE RIGHT HONORABLE
THOMAS
LORD VISCOUNT
WEYMOUTH.

My LORD,

I Presume to dedicate to Your Lordship the result of my amusement during my late residence in the Country ; a book which, for the sake of this Nation, I request that you will never read. The subject, though of consequence to some individuals, is be-

iv DEDICATION.

neath the attention of a Secretary of State. But no man knows better than Your Lordship the importance of the office you fill; therefore no man is less likely to indulge in trivial studies or amusements.

Why then, it may be asked, do I trouble You with a book, with the subject of which You ought to remain unacquainted? If Your Lordship ask the question, I will honestly tell You, that my motives are *gratitude* and *vanity*. With regard to the first, it is all I have to offer for obligations which I can never forget; and concerning the latter, I could not resist the opportunity of boasting to the world, that I am not disregarded by a Minister of State,

DEDICATION. v

State, conspicuous for abilities, firmness and integrity ; a Minister whom faction and ignorance may censure, but whom all wise and good men, of the present and of succeeding ages, will admire and applaud.

I am,

My LORD,

Your Lordship's

Most obedient

and humble servant,

JOHN BERKENHOUT.

DEDICATION

State, conspicuous for wisdom, firm
acts and integrity; a minister, whose
faction and ignorance may condemn
but whom all wise and good men, of
the present and of succeeding ages,
will admire and applaud.

I am, Sir,

Very respectfully,
Your obedient servant,

Wm. Lloyd Garrison

and humble servant

JOHN B. GARRISON

P R E F A C E.

THE present age is distinguished by no event so characteristic as the improvement of Natural History. There were indeed many curious naturalists in former times, particularly in the last age and in this country, to whose labours we owe great obligation; but for want of a clear idea of system, their writings were confused, and the study of nature remained too difficult to become general. To form a regular scientific System of Nature was reserved for the great, the celebrated, the indefatigable Linnæus, whose genius and industry can hardly be sufficiently admired.

Nevertheless, the Linnæan System hath met with some opponents, and many objections have been made to particular parts of it; but this opposition, and these objections, were insufficient to prevent its being universally received and adopted.

That the System is imperfect is most certain ; but those who expect perfection in a system of Nature, are unacquainted with the subject. The works of the Creator are linked together in one continued perfect chain, so as to admit of no absolute division, and consequently can never be reduced to a positive system. All that we can expect is such an artificial arrangement and division of bodies into kingdoms, classes, orders, genera, and species, as may enable us to distinguish, with precision, one body from another. In this attempt Linnæus has succeeded much better than any preceding writer, ancient or modern ; Linnæus, therefore, I have followed implicitly : I mean in regard to arrangement. But as the Natural History of a particular country admits of more precision and explanation, than a general System, I have added to, and frequently varied from his descriptions : so that those who may, at first sight of this work, suppose it to be nothing more than a translation of Linnæus, will, upon comparing it with the *Systema Naturæ*, find themselves mistaken.

P R E F A C E.

ix

These volumes being intended as pocket companions for young Naturalists in their excursions from home, I have avoided swelling the work with references to the authors I have consulted, quoting those only which are either omitted, or wrong quoted, by Linnæus in his last edition of the *Systema Naturæ*: for the rest, I must refer the Reader to that Work.

The remaining two volumes, containing the Vegetable and Fossile Kingdoms will be published with convenient speed.

The

My dear Mr. Garrison
I have just received your letter of the 28th
and am glad to hear that you are
interested in the cause of the
colored people. I am sure that
you will do all in your power
to help them. I am very
truly yours
Wm. Lloyd Garrison

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The ANIMAL KINGDOM is divided
into six Classes, viz.

- Class I. MAMMALIA. Suckle their young.
II. BIRDS. Body covered with feathers.
III. AMPHIBIA. Lungs arbitrary.
IV. FISHES. Breathe by gills, not arbitrarily.
V. INSECTS. Two *antennæ*, or feelers.
VI. VERMES. No head.

I. MAMMALIA.

- Order I. *Primates*. Four parallel fore teeth. Two
pectoral *mammæ*.
II. *Feræ*. Upper fore teeth 6; canine teeth
2 in each jaw.
III. *Glires*. Fore-teeth sharp, 2 in each jaw.
No canine teeth.
IV. *Pecora*. No upper fore-teeth. Under
fore-teeth 8. Hoof divided. Horns.
V. *Belluæ*. Fore-teeth more than 2 in each
jaw. No horns.
VI. *Cete*. No legs.

II. BIRDS.

- Order I. *Accipitres*. Bill and claws arched,
strong.
II. *Picæ*. Bill compressed, curved a little.
III. *Anseres*. Bill obtuse at the end. Feet
webbed or finned.
IV. *Grallæ*. Legs very long.
V. *Gallinæ*. Bill convex; the upper man-
dible arched. Toes connected by a
membrane

membrane at the bottom. Tail-feathers more than 12.

VI. *Passeres*. Bill conic, pointed. Nostrils oval, broad, naked.

III. AMPHIBIA.

Order I. *Reptiles*. Feet 4.

II. *Serpents*. No legs. No fins.

III. *Nantes*. No scales. Rays of their fins cartilaginous.

IV. FISHES.

Order I. *Apodes*. No ventral fins.

II. *Jugulares*. Ventral fins before the pectoral.

III. *Thoracici*. Ventral fins under the pectoral.

IV. *Abdominales*. Ventral fins behind the pectoral.

V. INSECTS.

Order I. *Coleoptera*. Wings 2, covered by 2 shells, divided by a longitudinal suture.

II. *Hemiptera*. Shells, or covers of the wings somewhat soft and incumbent on each other.

III. *Lepidoptera*. Wings 4, imbricated with minute scales.

IV. *Neuroptera*. Wings 4, naked, transparent, reticulated with veins or nerves. Tail without sting.

V. *Hymenoptera*. Wings 4, membranous. Tail of the female armed with a sting.

VI. *Dip-*

- VI. *Diptera*. Wings 2.
VII. *Aptera*. No wings.

VI. VERMES.

- Order I. *Intestina*. Naked, simple, without limbs.
II. *Mollusca*. Simple, without shell; but
not entirely without limbs.
III. *Teslacea*. Inclosed in a hard shell move-
able by the animal.
IV. *Lithoplyta*. Coral.
V. *Zoophyta*. Stems vegetating and chang-
ing into animals.

THE
ANIMAL KINGDOM.

CLASS I.

MAMMALIA

Suckle their Young. Quadrupeds, except the
last Order.

Ord. I. PRIMATES.

Four parallel upper fore-teeth. Two pectoral
mammaræ.

HOMO. Fore-teeth sharp-edged. Walks
erect.

1. Sapiens. *Rational Man.*

VESPERTILIO. Teeth sharp-pointed.
Flies.

1. Auritus. *Long-eared Bat.* Ears double and
larger than the head. Length not
quite two inches.

2. Murinus. *Short-eared Bat.* Length $2 \frac{1}{2}$
inches.

III. FERÆ.

III. FERÆ.

Upper fore teeth 6, somewhat sharp and conic. Canine teeth 2 in each jaw, longer than the rest.

PHOCA. Hind legs horizontal. Feet webbed.

1. Vitulina. *Seal, or Sea Calf.* No external ears. Length 5 or 6 feet. Frequent on the rocky shores of Wales, Cornwall, and Ireland.

CANIS. Fore teeth in each jaw 6. Grinders 6 or 7. Canine teeth curved. Lateral fore teeth longer and distant from the rest; the intermediate ones lobed. Five toes before, 4 behind.

1. Familiaris. *Dog.* Tail bends to the left.

Varieties. *Mastiff, Hound, Greyhound, Pointer, Spaniel, Terrier, Sheep, Lap-dog, Cur.*

2. Vulpes. *Fox.* Tail a brush, not bent, and tipped with white. Lips white. Forefeet black.

FELIS. Fore-teeth equal. Grinders 6 in each jaw. Tongue rough. Claws retractile.

1. Catus. *Cat.* Tail long, annulated. Body marked with spiral, and 3 longitudinal stripes. Our tame cats are less in size, and vary in colour.

MUSTELA. Fore-teeth in each jaw 6 ; those of the under-jaw close, obtuse, with two interior ones. Body long and slender. Legs short. Five toes on each foot.

1. *Lutra.* *Otter.* Colour dark brown, with two white spots on each side the nose. Length 3 feet 3 inches. Tail compressed and taper. Eyes small. Ears short. Long whiskers. Feet webbed.
2. *Martes.* *Martin.* Colour dark brown. Throat and breast white, or yellow. Length 2 feet and a half. Canine teeth large. Skin and excrement smell like musk. Nose sharp.
3. *Putorius.* *Polecat.* Length about two feet. Colour blackish tawny. Muzzle and ears white. Nose sharp.
4. *Erminea.* *Stoat, or Ermine.* Upper part of the body pale brown ; under white. Tail tipped with black, ears and toes with white. Length 15 inches.
5. *Nivalis.* *Weasel, or Fomart.* Upper part of the body and tail entirely tawny. Throat and belly white. Length 9 inches.

URSUS. Fore teeth in each jaw 6 ; upper ones excavated. Grinders 5 or 6. Body thick and clumsy. Toes 5 on each foot.

1. *Meles.* *Badger.* Length 2 feet and half. Upper part of the body grey ; under, black.

Tail short, with long stiff hair. Face black and white. Fore claws long. A transverse orifice between the tail and the anus. Three black bristles over each eye.

TALPA. Upper fore-teeth 6; lower 8.

1. Europæa. *Mole*. Five toes on each foot. Snout long. Eyes small. Fur remarkably soft. No external ears. Fore legs short, with broad feet turned outwards.

SOREX. Upper fore-teeth 2, bifid; lower 4; canine several.

1. Araneus. *Shrew-Mouse*. Snout and tail long. Above brown; Beneath dirty white. Toes 5 on each foot. Eyes small. Length 4 inches.

ERINACEUS. Fore-teeth 2 in each jaw; canine teeth 4 above, 3 beneath.

2. Europæus. *Hedgehog*. Five toes on each foot. Long Snout. Body covered with long sharp bristles. Length 11 inches.

IV. GLIRES.

Fore-teeth 2 in each jaw, remote from the grinders. No canine teeth.

LEPUS. Ears long. Tail short. Upper foreteeth double. Toes 5 before, 4 behind.

1. Timidus.

1. Timidus. *Hare*. Ears tipt with black.
2. Cuniculus. *Rabbit*. Ears almost naked. Pupil of the eyes red.

MUS. Lower fore-teeth small, pointed.
Toes 4 before, 5 behind. Tail long.

1. Norvegicus. *Norway Rat*. Length to the tail 9 inches; tail 9 inches. Back tawny. Belly dirty white. Feet and legs almost bare. Tail scaly. Omitted by Linnæus.
2. Terrestris. *Short-tail'd Field-mouse*. Head large. Length to the tail 6 inches; tail $1\frac{1}{4}$ inch, ending in a brush. Back rusty black; belly ash colour.
3. Amphibius. *Water Rat*. Length to the tail 7 inches; tail 5. Body covered with long hairs brownish black. Belly grey. Tail black, white at the extremity. Ears and eyes small.
4. Rattus. *Common Rat*. Tail longer than the body. On the fore feet 4 claws and a kind of thumb nail; behind 5. White whiskers.
5. Musculus. *Common Mouse*. Differs very little from the Common Rat, except in being much less.
6. Avellanarius. *Dermouse*. Toes 4 before, 5 behind, the interior of which wants the nail. Tail $2\frac{1}{4}$ inches, thick set with hair. Colour tawny red. Throat white. Size of the common mouse.

6 MAMMALIA. PECORA.

7. *Sylvaticus. Long-tailed Field Mouse.* Differ from the common rat and common mouse chiefly in being less than the former and larger than the latter. Back brown. Belly grey.

8. *Less Long-tailed Field Mouse.* From nose to tail $2\frac{1}{2}$ inches; tail 2 inches. Weight $\frac{1}{8}$ of an ounce. Ears naked. Back and belly divided by a strait line on each side.

SCIURUS. Upper fore-teeth like wedges; lower compressed.

1. *Vulgaris. Squirrel.* Colour red-brown; breast and belly white. Ears tufted. Tail a brush.

V. PECORA.

Upper fore-teeth none. Under fore-teeth 8, distant from the grinders. Canine teeth none. Hoof divided.

CERVUS. Horns solid, rough, annual.

1. *Elaphus. Stag, Red Deer, or Hart.* Horns round, branched, and turn backward.

2. *Dama. Buck, or Fallow Deer.* Horns compressed, branched, turned backward, and broad at the extremities.

3. *Capreolus. Roebuck.* Horns round, erect, and bifid at the extremity. Least species. In the highlands of Scotland.

CAPRA.

CAPRA. Horns hollow, rough, simple, erect, bending backwards. Body covered with long hair.

1. Hircus. *Goat*. Horns edged on the interior side, round on the exterior. Long beard.

OVIS. Horns rough, hollow, simple, spiral, turning outwards. Body covered with wool.

1. Aries. *Sheep*. Horns compressed.

BOS. Horns smooth, simple, hollow.

1. Taurus. *Ox*. Horns round, curving upwards and outwards.

VI. BELLUÆ.

Fore-teeth, in each jaw, obtuse, truncated.
No horns.

EQUUS. Fore-teeth 6 in each jaw.
Hoof undivided.

1. Caballus. *Horse*. Tail covered entirely with long hair. Ears short, erect. Mane long.

2. Asinus. *Ass*. Long hair towards the extremity of the tail. Ears long, flaccid. A black cross on the top of the shoulders.

SUS. Hoof divided. 2 tusks in each jaw.

B 4. 1. Scrofa.

1. Scrofa. *Hog*. Ridge beset with strong bristles.

VII. CETE.

Spiracula, or spout in the upper surface of the head. Pectoral soft fins. Tail horizontal. Copulate like quadrupeds, which they resemble also in the structure and use of their internal parts.

BALÆNA. No teeth. Spout double.

1. Mysticetus. *Whale*. No dorsal fin. Spout in the middle of the head. Under jaw much larger than the upper. Eyes very small and distant from each other. Skin smooth. Belly white. The largest of all animals. *Dale Harw.* 409.
2. Physalus. *Fin-back Whale*. A dorsal fin near the tail. Body long and small. Belly smooth. *Dale Harw.* 410.
3. Boops. *Pike-headed, or Sharp-nosed Whale*. Horny protuberance on the back towards the tail. Back smooth and shining. Longitudinal folds on the belly. *Dale Harw.* 410. *Sib. Obs.* 29.
4. Musculus. *Round-nosed Whale*. A dorsal fin. Under jaw much larger than the upper. Belly folded. *Sib. Obs.* 33.

PHYSETER. Teeth in the under jaw.

1. Catodon. *Less Whale*. No dorsal fin. Spout in the nose.

2. Ma-

2. Macrocephalus. *Sperma-ceti Whale*. No dorsal fin. Spout in the back part of the head. Double row of teeth in number 46. Length 50 or 60 feet.
3. Microps. *Sharp-toothed Whale*. Dorsal fin long. Upper maxilla longer than the under. Teeth hooked. Spout in the middle of the nose.
4. Turfio. *Blunt-toothed Whale*. Dorsal fin very long and erect. Spout in the forehead.

DELPHINUS. Teeth in each jaw. One dorsal fin.

1. Phocæna. *Porpoise*. Back broad and black. Belly white. Nose short, obtuse. Teeth small, acute.
2. Delphis. *Dolphin*. Body long, and nearly round. Nose long, sharp, with a broad transverse mark. Teeth small, pointed. Length 9 or 10 feet.
3. Orca. *Grampus*. Teeth obtuse. Nose turned a little upwards. Upper jaw much less than the under. Length 24 feet.

10 BIRDS. ACCIPETRES.

CLASS II.

BIRDS.

Body covered with Feathers.

ACCIPETRES.

Birds of prey. Bill and claws strong, hooked. An angle in each margin of the upper mandible. Body muscular. Females larger and more beautiful than the males.

FALCO. Bill arched from the base, which is covered with a wax-like membrane or cere.

1. *Osiefragus.* *Sea Eagle.* Cere yellow. Colour light brown. Legs yellow and feathered half way down. Tail spotted with white. Claws black. In several parts of Britain and Ireland.

2. *Chrysætos.* *Golden Eagle.* Cere and legs yellow, feathered to the toes. Wings reach to the extremity of the tail. Beak lead colour. Irrides hazel. Colour dark brown. Weight 12 pounds. Tail clouded with dark ash colour. In the mountainous parts of Ireland, and sometimes in Wales.

3. *Fulvus.*

3. Fulvus. *Ringtail Eagle*. Resembles the last in size and colour, but distinguished by a broad white band across the tail.
4. Albiulla. *Erne*. Bill, cere, irrides and legs pale yellow. Between the eyes bare. Head and neck ash colour. Body dark brown. Tail white. Less than the former. *Lin. Syst. Nat. Ed. 12. p. 123.*
5. Pygargus. *Hen-Harrier*. Male: cere and feet yellow. Above grey; beneath white. Weight 12 ounces. Length 17 inches. Female: A rough round the head. Under each eye a white spot. Back dusky; rump white. Belly redish brown. Weight 16 ounces, Length 20 inches.
6. Milvus. *Kite*. Cere and legs yellow. Head grey. Back brown. Tail forked. Flies remarkably steady.
7. Gentilis. *Falcon Gentle*. Cere, irrides, and feet yellow. Above deep brown. Breast and belly yellowish with longitudinal spots. 5 or 6 broad bars across the tail. Feather of the head black edged with brown. *Sib. Sect. II. lib. 3. p. 14.*
8. Subbuteo. *Hobby, or Tree Falcon*. Cere and feet yellow. Above black brown. Beneath white, with long brown spots on the breast. Back of the neck white. Under each eye a dark longitudinal spot. Length 12 inches. Weight of the male 7 ounces.
9. Buteo. *Common Buzzard*. Cere and feet pale

pale yellow. Beak lead colour. Above ferruginous brown. Beneath yellowish white, spotted with brown. Tail barred with black and ash colour, and tip with brownish white. Weight 32 oz. Length 22 inches.

10. *Tinnunculus*. *Kestrel*. Cere and feet yellow. *Male*: Head light grey: tail the same, with a black bar near the end and tip with white. Back purple spotted with black. Weight 6 $\frac{1}{2}$ oz. Length 14 inches. *Female*: Back less bright. Head and tail pale brown spotted with black. Weight 11 ounces.

11. *Lanarius*. *Lanner*. Cere yellow-blue. Bill and feet blue. Above deep brown. Beneath yellow-white, with brown spots. A white line above each eye.

12. *Haliaetus*. *Osprey*. Cere and feet blue. Back brown. Belly and back of the head white. A brown patch from the eye down each side the neck. Legs naked. Weight 62 oz. Length 23 inches.

13. *Gyrfalco*. *Gyr Falcon*. Cere and feet blue. Beak and legs yellow. Body white spotted with dark lines. Length 20 inches.

14. *Apivorus*. *Honey Buzzard*. Cere and bill black. Legs yellow and half naked. Head ash colour. Back brown. Breast and belly white, spotted. Tail barred. Claws brown and not much curved. Weight 30 oz. Length 23 inches.

15. *Æru-*

15. *Æruginosus. Mier Buzzard.* Cere greenish yellow. Body chocolate tinged with brown. Legs long and slender. Beak and Talons black. Weight 20 oz. Length 21 inches.
16. *Palumbarius. Gos Hawk.* Cere yellow-green. Irrides and feet yellow. Beak and talons black. Head and back deep brown. Breast and belly white waved with brown. A white line above the eye. Tail barred and much longer than the wings when folded. Length 22 inches.
17. *Nifus. Sparrow Hawk.* Cere green-yellow. Feet yellow. Bill blue. Claws black. Above brown, or grey. Beneath tawny white, waved with brown. Tail ash colour, barred and tipped with white. Weight of the *male* 5 oz. *female* 9.
18. *Peregrine Falcon.* Cere, irrides, legs and feet yellow. Beak blue. Claws black. Above ash colour barred with black and blue. Beneath white tinged with brown, with longitudinal and transverse lines. Length 16 inches. Builds annually in the rocks of Llandidno in Carnarvonsh.
19. *Grey Falcon.* Cere and legs yellow. Irrides red. Fore part of the head deep brown; hind part white. Sides of the head and throat cream colour. Belly white with long black spots. Back deep grey. Wings folded
extend

extend beyond the extremity of the tail. Legs long and naked.

20. *Merlin*. Cere and legs yellow. Bill lead colour. Above purpleish ash colour with ferruginous spots. Beneath yellowish white with brown spots. Tail barred with brown. Length $6\frac{1}{2}$ inches.

STRIX. Bill short, hooked, without cere. Head large. A broad disk surrounding each eye. Legs feathered to the toes. Tongue bifid. Nocturnal.

1. *Otus*. *Long-eared Owl*. Bill and claws black. Plumage red-brown variegated with white. Auricular feathers 6. Length of the female 14 inches. In the North and in Wales.
2. *Short-eared Owl*. Horns, or Ears a single feather. Above brown. Beneath pale yellow. Quill feathers barred with red. Tip of the tail white. Length 13 inches and a half. *Br. Zool.* 71. 8vo. 156.
3. *Flammea*. *White Owl*. Above pale yellow, with white spots. Beneath white. Interior sides of the quill feathers 4 black spots on each side. Edge of the middle claw serrated. Weight 11 ounces. Length 14 inches.
4. *Stridula*. *Tawny Owl*. Above tawny red, spotted with black and white. Beneath

neath yellowish with black longitudinal strokes.

5. *Ulula. Brown Owl.* Above deep brown spotted with black and white. Beneath pale ash colour mixt with tawny, with black strokes. Disk round the eyes ash colour with brown spots.
6. *Passerina. Little Owl.* Not much larger than a thrush. Irrides and bill pale yellow. Above olive brown with white spots. Beneath white with brown spots. In Yorkshire, Flintshire, and sometimes near London.

LANIUS. Bill hooked towards the end, with a notch in the upper mandible. Tongue jagged.

1. *Excubitor. Great ash coloured Butcher bird.* Bill and legs black. Tail wedged, black in the middle and white on the sides. Crown and back ash colour. Wings black with a white bar. Cheeks white with a black stroke. Weight 3 oz. Length 10 inches. Migrates.
2. *Collurio. Red-back'd Butcher Bird, or Flusher.* Bill and Tail like the former. Head, rump, and legs ash colour. Back red-brown. Beneath blossom. Black stroke across the eyes. Weight 2 oz. Length 7 $\frac{1}{2}$ inches.
3. *Wood Chat.* Bill horn colour, with white feathers at the base. Black line cross the eye, extending down the neck.

neck. Head and back of the neck bright bay. Back dusky. Scapulars white. Quill feathers black, with a white spot towards the bottom. Breast and belly yellowish white. Two middle feathers of the tail and legs black. Size like the former. *Br. Zool.* fol. 74. 8vo. 164. Migrates.

II. P I C Æ.

Bill compressed, convex.

CORVUS. Bill strong, conic, with bristles at its base reflected downwards. Tongue bifid.

1. Corax. *Raven*. Above shining bluish black. Beneath dusky. Weight 3 pounds. Length 26 inches.

2. Corone. *Crow*. The whole body bluish black. Tail rounded. Weight 20 oz. Length 18 inches.

3. Frugilegus. *Rook*. Colour bluish black. Nostrils, chin and sides of the mouth white and bare. Somewhat larger than the last.

4. Cornix. *Royston-Crow*. Back, breast, belly, and upper part of the neck ash colour; the rest bluish black. Weight 22 oz. Length 22 inches. Migrates.

3. Frugilegus. *Rook*. Colour bluish black. Nostrils, chin and sides of the mouth
white

white and bare. Somewhat larger than the last.

5. *Monedula. Jackdaw.* Back of the Head, Breast and Belly ash colour; the rest black. Irides white. Weight 9 oz. Length 13 inches.
6. *Glandarius. Jay.* Head covered with long feathers. Forehead white with black strokes. Neck black. Coverts of the Wings fine blue, barred with black and white. Back, Breast, and Belly, purple, dashed with grey. Rump white. Tail black. Weight 6 oz. Length 13 inches.
7. *Caryocatactes. Nutcracker.* Brown, spotted with triangular white spots. Wings black. Tail black, rounded, tip with white. Rare in this Kingdom.
8. *Pica. Magpye.* Black and white. Tail long, wedge-fashioned and richly tinged. Weight 9 oz. Length 18 inches.
9. *Graculus. Cornish Cough.* Purplish black. Bill and Legs orange. Weight 13 oz. Length 16 inches. *Cornwall, Flintsh. Caernarvonshire, and Anglesea.*

CORACIAS. Bill sharp-edged, and curved towards the apex.

1. *Garrula. Roller.* Colour greenish blue. Back red-brown. Bill black. Legs yellow. Tail forked. Weight 7 oz. Length 13 inches. Rare in this island.

C

CUCULUS.

CUCULUS. Bill roundish and curved a little. Nostrils circular, with a raised margin. Tongue entire, pointed. Two fore and 2 hind claws.

1. *Canorus. Cuckoo.* Above ash-colour. Beneath white, waved with transverse black lines. Tail rounded and spotted with white. Weight 5 oz. Length 14 inches. Migrates.

YUNX. Bill short, roundish, pointed. Nostrils concave, naked. Tongue very long, cylindrical. Two fore and two hind claws.

1. *Torquilla. Wrenneck.* Above ash-colour, with black and brown strokes. Beneath light brown, with black spots. Tail ash-colour, with 4 black bars. Irides hazel. Weight 1½ oz. Length 7 inches. Migrates.

PICUS. Bill angular, strait. Nostrils covered with recumbent bristles. Tongue very long and round, with a sharp, hard, barbed point. Two fore and 2 hind claws.

1. *Viridis. Green Woodpecker.* Crown crimson. Back green. Rump pale yellow. Beneath pale green. Tail tip with black. Bill lead colour. Legs and Feet greenish ash-colour. Weight 6½ oz. Length 13 inches.

2. Major. *Greater spotted Woodpecker*. Irides red. Crown of the Head black, back part crimson. A black collar round the neck. Back and Rump black. Cheeks and Scapulars white. Breast yellowish white. Weight 3 oz. Length 9 inches.
3. Medius. *Less spotted Woodpecker*. Crown and back of the Head crimson. Above black. Scapulars white. On each side the Breast a broad black line. Length $8\frac{1}{2}$ inches. Three exterior feathers of the Tail tipped with white.
4. Minor. *Least spotted Woodpecker*. Crown crimson. Above black barred with white. Beneath dirty white. Weight 1 oz. Length 6 inches. In the Female the crown is white.

SITTA. Bill strait, roundish, and compressed at the apex. Three fore and 1 hind Toe.

1. Europæa. *Nuthatch, or Woodcracker*. Upper mandible black, lower white. Crown black. Black stroke across the Eyes. Cheeks and Chin white. Coverts of the Wings bluish ash-colour. Beneath dull orange. Legs pale yellow. Twelve feathers in the Tail. Weight 1 oz. Length 6 inches.

ALCEDO. Bill triangular, thick, strait, long. Tongue short, sharp.

1. *Ispida. Kingfisher.* Bill, upper mandible black, under yellow. Crown and Coverts of the Wings dark green, spotted with blue. Scapulars and Coverts of the Tail bright azure. Beneath orange. Tail deep blue. Feet orange. Weight $1\frac{1}{4}$ oz. Length 7 inches.

UPUPA. Bill arched, convex, and somewhat obtuse.

1. *Epops. Hoopoe.* Crest orange, tipped with black, 2 inches long. Bill and Legs black. Neck tinged with red. Beneath white. Above barred with black and white. Rump white. Tail of 10 feathers black and white. Migrates.

CERTHIA. Bill arched, slender, and somewhat angular. Tongue sharp.

1. *Familiaris. Creeper.* Above brown, streaked with black. Quills tipped with white. Beneath white. Tail of 12 long feathers. Weight 5 drams. Length $5\frac{1}{2}$ inches.

III. ANSERES.

Bill obtuse, covered with a thin membrane, broad, gibbous below the base, swelled at the apex. Tongue fleshy, Legs naked, Feet webbed, or finned.

ANAS.

ANAS. Bill convex above, flat beneath, hooked at the apex, with membranous Teeth.

1. Cygnus. *Wild Swan*. Cere yellow. Bill black. Plumage white. Legs and Feet brown.

Manfuetus. Tame Swan. Cere knotty and black. Bill red, tip with black. Feet lead colour. Larger than the former.

2. Tadorna. *Sheldrake, or Burrough Duck*. Bill red. Head dark green. Neck and Back white. Scapulars black. Breast orange. Belly white, divided by a longitudinal black line. Tail white, tip with black. Legs pale red. Weight 2lb. 10 oz. Length 2 feet. On the sea coast.

3. Fusca. *Velvet Duck*. Bill broad and short, sides yellow, hook red, and a black tubercle at the base. Plumage black, with a white spot behind each Eye, and on each Wing. Legs red; Webs and Nails black. *Female*: deep brown.

4. Nigra. *Scoter, or black Diver*. Plumage entirely black. Bill black, yellow in the middle, with two large red tubercles at the base. The Sorbonne pronounced this bird to be a fish, and therefore might be eaten in Lent.

5. Marila. *Scaup Duck*. Bill lead colour. Head, Neck, Breast, and Tail black. Belly white. Back grey. Less Quills white

tipt with black. This species varies greatly in colour.

6. *Anser. Goose.* In its wild state, above brown, Beneath white. A white ring round the Tail. Bill narrow, middle red, base and hook black.
7. *Erythropus. White-fronted Wild Goose.* Bill orange, thicker and larger than the last. Forehead white. Crown brown. Breast ash-colour. Belly white, with large black spots. Back grey. Tail black. Legs orange.
8. *Barnacle.* Bill black. A black line from the Bill to the Eyes. Forehead and Cheeks white. Back of the Head, Neck, and Shoulders black. Back grey. Belly white. Tail and Legs black. Frequent in Winter on the north-west coast.
9. *Bernicla. Brent Goose.* Head, Neck, Tail, Quills, Legs black. Breast, Scapulars and Coverts of the Wings ash-colour. Frequent in *Ireland*, where they are called *Bernacles*.
10. *Mollissima. Eider Duck.* Bill, Forehead, Belly, Tail, and Quills black. Crown, Cheeks, Neck, Back, Coverts of the Wings and Scapulars white. A black bar across the Eyes. A green stain on the back of the Neck. Legs green.
11. *Clypeata. Shoveller.* Bill black, and very broad at the end. Irides hazel. Head dark green. Breast and Scapulars white. Back

Back brown. Coverts of the Wings blue. Tail of 14 feathers, exteriors white, those in the middle black, edged with white. Vent feathers black. Legs red. Weight 22 oz. Length 22 inches.

12. *Red-breasted Shoveller*. Bill large, broad, serrated, brown-yellow. Head large. Eyes small; Irides yellow. Breast red-brown. Back brown. Wings, quills brown, the rest grey, spot purple, edged with white. Tail white. Feet red-brown. Size of a common Duck, *Lincolnshire*.
13. *Strepera*. *Gadwall*. Bill black. Head brown, spotted with black. Breast, Back, and Scapulars marked with black and white lines. Belly dirty white. Rump black. Tail ash-colour, edged with white. A white spot on the Wings. Legs orange.
14. *Clangula*. *Golden Eye*. Bill, Back, Tail, and Coverts of the Wings black. Beneath white. Middle of the Wings white, the rest black. A white spot on each side the Mouth. Legs orange. Weight 2 pounds. Length 19 inches. Sea coast, and on the lakes in *Shropshire*.
15. *Penelops*. *Wigeon*. Bill lead-colour tipped with black. Head bright bay. Back waved with black and white. Breast purplish. Belly white. Vent black. Middle quills green, tipped with black. Tail, 2 middle feathers black, longer, pointed;

pointed ; the rest ash-colour. Weight 23 oz. Length 20 inches.

16. *Glacialis. Swallow-tail'd Sheldrake.* Bill, base and tip black, middle orange. Neck, Scapulars, Belly, and exterior feathers of the Tail white. Breast and Back chocolate colour. Four middle feathers of the Tail black, and 4 inches longer than the rest. On our coasts in hard winters only.
17. *Ferina. Pochard, or Dun Bird.* Bill and Legs lead-colour. Head and Neck bright bay. Breast and upper part of the Back black. Above grey, with black lines. Belly ash-colour. Tail of 12 feathers dark grey. Weight 28 oz. Length 19 inches.
- 18 *Ferruginous Duck.* Bill and Legs pale blue. Plumage red-brown. Webs black.
19. *Grey-headed Duck.* Bill and Legs yellow-brown. Irides gold colour. Head and Breast grey. Neck and Belly white. Back, Wings, and Tail black.
20. *Querquedula. Garganey.* Bill and Legs lead colour. Black spot on the chin. A white line from the corner of each Eye. Cheeks and upper part of the Neck pale purple, with small white lines. Breast brown, with black curved lines. Belly white. Exterior webs of the middle quills green.
21. *Crecca,*

21. *Crecca. Teal.* Bill and Vent feathers black. Head bay, with a green and a white line on each side. Beneath dirty white. A green and a black spot on the Wings. Coverts of the Wings brown. Tail pointed. Weight 12 oz. Length 17 inches.
22. *Boschas. Mallard, Wild or Tame Duck.* Bill green-yellow. Head and Neck green. An imperfect white circle round the Neck. Beneath grey. Scapulars white, barred with brown. Spot on the Wings purple. Tail of 24 feathers, 4 middle ones black, and curled upwards in the Male.
23. *Fuligula. Tufted Duck.* Bill and Legs lead-colour. Crest pendent. Belly and middle Quills white. The rest of the Plumage black. Weight 2lb. Length 15 inches. Female wants the crest.

MERGUS. Bill long, roundish, taper, ferrated and hooked at the apex. A Crest on the Head. Migrate.

1. *Merganser. Goosander. Male:* Bill, Irides and Legs red. Head green-black. Neck Breast, and Belly, pale yellow. Wings and Tail black and white. Weight 4lb. Length 2 feet 4 inches.

Dun Diver, Female: Head ferruginous. Back and Tail ash-colour. Less than the Male.

2. *Serrator.*

2. Serrator. *Less Dun Diver*. Lower Mandible and Irides red. Head red-brown. Throat and Belly white. Breast and ridge of the Wings, Scapulars, Back, and Tail ash-colour. Wings black and white. Weight 2lb. Length 21 inches.

3. Albellus. *Smew, or White Nun*. Bill and Legs lead-colour. A long Crest. Above black and white. Beneath white. Head and Neck white. A green-black spot on each side the Head. Tail ash-colour. Weight 34 oz. Length 18 inches.

Lough Diver. Female: Less than the Male. Head ferruginous. Breast clouded with grey.

4. Minutus. *Red-headed Smew*. Bill lead-colour. Head red-brown, with a small Crest, and a black spot on each side. Cheeks, Throat, and Belly white. Back Tail and Legs ash-colour. Wings black and white. Weight 15 oz. Length 16 inches.

ALCA. Bill short, compressed, convex, furrowed transversely, and not serrated. No back Toe.

1. Torda. *Awk*. Bill, Head, Throat, Back, Tail, Legs black. Tips of the Wings and Belly white. A white line from the Eyes to the Bill. On the upper Mandible 4 grooves, on the under 3. Weight 22 oz. Length 18 inches.

2. *Pica*. *Black-bill'd Awk*. Cheeks, Chin, and Throat white. In other respects like the former. Weight 18 oz. Length 15 inches.
3. *Impennis*. *Great Awk, or Pinguin*. Wings very short. A white spot between the Eyes and Bill. Under side of the Body and tips of the Wings white; the rest black. Length to the end of the Toes 3 feet. On the isle of *St. Kilda*.
4. *Arctica*. *Puffin*. Bill compressed, triangular, sharp-pointed, red, base grey, furrows 4. Nostrils long and narrow. Eye-lids callous, edges crimson. Above black. Cheeks, Chin, Belly white. Collar black. Legs orange, and near the Tail. *Priestholm isles. Anglesey. Man.* Migrates.
5. *Alle*. *Little Awk*. Bill short, conic, black. Above black. Beneath, and tips of the less Quills white. Scapulars black and white. Legs and Feet scaly, Webs black. Size of a Blackbird. *Lancashire.*

PROCELLARIA. Bill compressed, hooked at the end. Nostrils tubular. Back Toe sessile. Spout oil from their Bills. Migrate.

1. *Pelagica*. *Storm-finch*. Black. Coverts of the Tail and Vent white. Wings very long. Size of the Swallow.

2. *Glacialis*

2. *Glacialis. Fulmar.* Bill and Legs yellow. Head, Neck, Breast, Belly white. Above ash-colour. Length 18 inches. *St. Kilda.*
3. *Puffinus. Shear-Water.* Head, Back, Wings, Tail, Thighs black. Beneath white. Legs weak, compressed. Length 17 inches. *Calf of Man.*

PELECANUS. Bill strait, hooked at the end; without nostrils. Four Toes connected by a membrane.

1. *Carbo. Cormorant.* Bill ash-colour, with a yellow naked skin round the base. Head and Neck black. Chin white. A short pendent Crest. Above bluish green. Beneath dusky. A white tuft on the Thighs. Tail long and rounded. Legs black; the middle claw serrated. Weight 4lb. Length 32 inches.
2. *Graculus. Shag.* Long crest. Above green. Beneath brownish grey. Tail of 12 feathers, rounded. Feet black. Length 27 inches. *Holyhead.*
3. *Bassianus. Gannet, or Soland Goose.* Bill bluish grey. Jagged at the sides; a long furrow in the upper Mandible. Eyes yellow, surrounded by a blue skin. A black pouch under the Chin. Neck long. Crown buff colour. Wings and Legs black. The rest of the plumage dirty white. Tail rounded. Weight $4\frac{1}{4}$ lb. Length 37 inches.

COLYMBUS. Bill straight, slender, pointed.
Nostrils linear, at the base of the Bill.
Legs near the Tail. Feet webbed.

1. Grylle. *Black Guillemot, Greenland Dove, or Sea Turtle.* Bill black. Inside of the Mouth and Legs red. A large white spot on each Wing. Small Quills tipped with white. The rest of the plumage black. Length 14 inches. *St. Kilda. and Bass Isle.*
2. Trolle. *Guillemot.* Bill black. Inside of the Mouth yellow. Tips of the small Quills, Breast, and Belly white. The rest black. Weight 24 oz. Length 17 inches.
3. Septentrionalis. *Red-throated Diver.* Above grey. Beneath white. A few white spots on the Back. Throat dull red. Weight 3lb. Length 2 feet. *Lancashire; river Dee.*
4. Glacialis. *Great Northern Diver.* Beneath white. A semilunar white spot on the back of the Neck, and under the Throat. All the rest black; a purple tinge on the Neck. Length 3 feet 5 inches.

Feet finned.

5. *Grey speckled Diver.* Bill turns a little upwards. Above grey, speckled with white. Beneath white. Tail of 20 black feathers, some tipped with white.
6. Cristatus. *Great crested Grebe.* A pendent ruff under the Chin. No Tail. Above black.

black-brown. Beneath silver-white.
Weight $2\frac{1}{2}$ lb. Length 21 inches.
Shropshire, Cheshire.

7. *Auritus. Less crested Grebe or Dobchick.* Above black-brown. Beneath white. Head and Neck black. Ridge and tips of the Wings white. A tuft of long feathers on each side the Head. Legs green. Irides red. Less than a Teal.

8. *Little Grebe.* Above, Neck, Breast dark red-brown. Belly, ash-colour mixt with silver-white. Cheeks bright bay, Weight 7 oz. Length 10 inches.

9. *Urinator. Grebe.* Above black-brown. Beneath silver-white. Length 18 inches. Ridge of the Wings and tips of the small Quills white.

10. *White and Dusky Grebe.* Above black-brown. Beneath white. Ridge of the Wings and middle Quills white. A red skin between the Bill and the Eyes. Irides red. Feet externally greenish. Size of a Teal. *Lincolnshire.*

LARUS. Bill straight, sharp-edged, hooked at the end, a knob on the lower mandible. Nostrils narrow, in the middle of the Bill. Feet webbed.

1. *Tridactylus. Tarrock.* Bill, tips of the Wings, and tip of the Tail black. Head, Neck, Breast, Belly, and Tail white. A black crescent on the back of the Neck. Back bluish grey. Legs dull ash-colour.

four. A small protuberance in lieu of a back Toe. Weight 7 oz. Length 17 inches.

2. Canus. *Common Gull, Mew, or Sea Mail.* Bill yellow. Back grey. The rest white. Weight 12 oz. Length 17 inches.

3. Nævus. *Brown and White Gull, Wagel, or Dung Hunter.* Bill and Quills black. Tail black and white. The rest of the plumage a mixture of ash-colour, white and brown. Weight 32 oz. Length 23 inches.

4. *Winter Mew.* Irides hazel. Bill slender, whitish towards the base, black at the end. Back grey. Coverts of the Wings pale brown. First Quill black. A black bar across the Tail. The rest white; above spotted with brown. Weight 15 oz. Length 18 inches.

5. Marinus. *Great Black and White Gull.* Bill and Irides yellow; a red spot, with a black center in the lower mandible. Back and Wings black; all the rest white. Weight 5lb. Length 29 inches.

6. Fuscus. *Herring Gull.* Irides and Bill yellow; an orange spot on the lower mandible. Back ash-colour. Quills black. The rest white. Legs pale red. Weight 30 oz. Length 23 inches.

7. Ridibundus. *Pewit Gull, Black-cap or Sea Crow.* Bill and legs red. Head, Throat, and

and tips of the Wings black. Back and Wings ash-colour. The rest white. Its note a hoarse laugh. Weight 10 oz. Length 15 inches. *Staffordshire.*

8. Parasiticus. *Artic Gull.* Crown and legs black. Above brown. Beneath white. Tail of 12 feathers, 2 middle ones 4 inches longer than the rest. *Galway.*

9. Cataractes. *Skua.* Cere black. Bill and Claws very strong and hooked. Above brown. Beneath ash-colour and red. A bird of prey.

10. *Black-toed Gull.* Bill black, Cere brown. Legs lead-colour. Above black and white. Beneath white and brown. Tail 12 black feathers tipped with white; 2 middle ones longer. Weight 12 oz. Length 15 inches.

STERNA. Bill straight, slender, pointed. Nostrils narrow, on the base of the Bill. Tail forked. Feet webbed. Migrate.

1. Hirundo. *Greater Tern, or Sea Swallow.* Bill and Feet red. Crown, and tip of the Bill, black. Above grey. Beneath white. Weight 4 oz. Length 14 inches.

2. Minuta. *Less Tern.* Bill and Legs yellow. Tip of the Bill and Crown black. A black line between the Eyes and Bill. Above grey. Beneath white of exquisite

site gloss and softness. Tail white.
Weight 2 oz. Length $8\frac{1}{2}$ inches.

3. Fessipes. *Black Tern*. Head and under side of the body black. Above dark ash colour. Legs red. Less than the former. Frequents fresh water.

IV. GRALLÆ.

Bill roundish. Tongue entire, fleshy.
Thighs naked. Toes divided.

ARDEA. Bill strait, long, acute. Toes 4.

1. Cinerea. *Common Heron*. Bill greenish above, yellowish beneath, black at the end. A short pendent crest. Above grey. Beneath white, with longitudinal spots. A greenish naked skin between the Bill and the Eyes. Irides yellow. Quills black. Legs greenish.

2. Major. *Crested Heron*. A long pendent black crest. Forehead and Crown white. Feathers of the fore part of the Neck long and loose. Otherwise like the former; but not so frequent.

3. Stellaris. *Bittern*. Bill a little arched. Irides yellow. Crown black. A short pendent Crest. A black spot at each corner of the Mouth. Plumage pale dull yellow, spotted with black. Feathers of the breast long and loose. Legs greenish. Hind claw very long.

1)

4. Alba.

34. BIRDS. GRALLÆ.

4. Alba. *Great white Heron*. Entirely white. Legs black. Weight 40 oz. Length 40 inches. Migrates.
5. Minuta. *Little Bittern*. Bill green-yellow. Head, Back, Quills, Tail greenish-black. Fore part of the Neck, Breast, and Thighs buff. Belly white. Thighs feathered to the knees. Length 15 inches. Shot near Shrewsbury.

SCOLOPAX. Bill very long, slender, obtuse.

Arched Bills.

1. Arquata. *Curlew*. Bill 6 inches long. Plumage white spotted with black. Quills black. Tail white barred with black. Legs bluish grey. Weight from 22 to 37 oz.
2. Phæopus. *Whimbrel*. Bill not quite 3 inches long. Above brown spotted with black. Beneath white. Tail barred with black. Legs dull green. Weight not exceeding 12 oz.

Strait Bills.

3. Rusticola. *Woodcock*. Bill 3 inches long. Above variegated with red-brown, black and grey. Beneath dirty white, with transverse dark lines. Chin yellow. Weight 12 oz. Length 14 inches.
4. Gallinago. *Snipe*. Bill 3 inches. Four black and 3 red longitudinal lines on the head. Chin, Breast, and Belly white. Neck

Neck red and brown. Scapulars black and yellow. Tail tip with white. Legs pale green. Weight 4 oz. Length 12 inches.

5. Gallinula. *Jacksnipe*. Bill $1\frac{1}{2}$ inch. Crown black. Rump shining purple. Over each eye a yellow stroke. Weight scarce 2 oz. Length 9 inches.

6. Glottis. *Greenshank*. Bill $2\frac{1}{2}$ inches; upper Mandible black. Above ash colour. Beneath white. Tail white, undulated with dusky bars. Legs greenish and bare above the knees. Weight 6 oz. Length 14 inches.

7. *Spotted Redshank*. Above ash colour, the Head streaked with black, the Back spotted with white. Beneath white. Legs red. Size of the last.

8. Calidris. *Redshank*. Bill 2 inches, red at the base, black at the end. Head, back of the Neck and Scapulars dusky ash colour spotted with black. Back and underside of the body white, spotted with black. Tail barred with black and white. Legs orange. Weight $5\frac{1}{2}$ oz. Length 12 inches.

9. Limosa. *Less Godwit*. Bill a little curved upwards, redish at the base. Head olive brown. Neck ash colour. Back brown. A white crescent on the tail, which is somewhat forked. Legs black.

D 2 10. La-

10. *Laponica. Red Godwit.* Bill a little curved upwards, yellow at the base, black at the point. Plumage red-brown, streaked with black. Wings and Tail black and white. Legs black.

11. *Ægocephala. Godwit, or Yarwhelp.* Bill strait, 4 inches long, purple tip with black. A broad white stroke from the bill to the eye. Above red-brown. Beneath white. Quills black. Tail barred with black and white. Middle and exterior toe connected by a membrane. Weight 12 oz. Length 16 inches.

TRINGA. Bill roundish, strait, about the length of the head. Nostrils narrow. Toes 4.

1. *Pugnax. Ruff.* Feathers of the Neck remarkably long. Coverts of the Wings and 4 exteriors of the Tail brown. Four middle feathers of the Tail barred with black and brown. Legs yellow. Weight 5 or 6 oz.

Female, *Reeve.* Brown spotted with white or ash colour. No ruff. Legs red. These birds differ remarkably in their colours. Migrate.

2. *Vanellus. Lapwing, or Tewit.* Bill, Crown, Crest, Throat black. A black line under each Eye. Back purplish green. Wings and Tail black and white. Legs red. Weight 8 oz. Length 13 inches.

3. Mo-

3. *Morinella. Turnstone.* Bill strong, a little prominent above, whitish at the base, black at the end. Forehead and Throat ash colour. Neck and Back brown. Rump white with a triangular black spot. Tail black and white. Legs orange. Size of a Thrush. *Shropshire, Cornwall, Wales, Norfolk.*
4. *Macularia. Spotted Sandpiper.* Bill red, black at the point. Above olive brown, with black spots. Beneath white with dark spots. Above each Eye a white line. Quills black, the less tip with white. Middle of the tail brown, sides white and spotted. Legs pale dull red. Weight 5 oz. Length 10 inches. Migrates.
5. *Black spotted Sandpiper.* Bill short, obtuse, blackish. Nostrils black. Irises yellow. Head and under side of the body white spotted with black and brown. Above tinged with brown. Quills black with a white cross line. Two middle feathers of the Tail black, the rest white. Legs long and brown. *Lincolnshire.*
6. *Lobata. Grey scollop-toed Sandpiper.* Bill black with a double groove. Head and under part of the Body white. Above grey. Legs lead colour. Toes finned, scolloped, serrated. Weight 1 oz.
7. *Hyperborea. Red scollop-toed Sandpiper.* Bill strait, slender, round, pointed, black. Crown black-red. Neck red. Above brown,

brown, with yellow spots. Beneath white. Wings long, tip with white. Toes scolloped like the last. Size of a Blackbird. *Yorkshire.*

8. Alpina. *Dunlin.* Bill, Legs, Feet black. Above red-brown. Beneath white with black spots. Wings ash colour. Back Toe very short. Length 8 inches.

9. Ocropus. *Green Sandpiper.* Head brown-ash colour. Above green with white spots. Belly, Rump, Tail white, with a few black spots. Bill and Legs greenish lead colour. Length $8\frac{1}{2}$ inches. Frequents lakes and rivers.

10. Hypoleucos. *Sandpiper.* Bill, Head, Quills brown. Neck dark ash colour. Back brown mixt. with green, with transverse dusky lines. Longitudinal black lines on the Head. A white stroke above each Eye. Beneath white. Legs greenish. Weight 2 oz. On lakes and rivers.

11. Canutus. *Knot.* Bill deep ash colour. Under side of the Body, edges of the Wing-coverts, and sides of the Tail white. The rest brown. Tail-coverts spotted with white. Tail ash colour. Legs bluish grey. Toes divided to the bottom. Length 9 inches. On our coast in Winter.

12. *Ash coloured Sandpiper.* Breast and Belly white. The rest ash colour, the Head spotted with black, the Tail barred, and the Back curved with black and

and white. Legs black-green. Toes bordered with a scolloped membrane. In flocks on the *Welsh* coast in Winter.

13. Cinclus. *Purre*, or *Stint*. Bill slender, black. Head, Neck, Back, Tail ash colour. Coverts dark brown. Breast, Belly, and lower part of the Quills white. Legs greenish. Length 7 inches. In flocks on our coasts in Winter.

CHARADRIUS. Bill strait, roundish, obtuse. Nostrils narrow. Toes 3.

1. Hiaticula. *Sea Lark*. Bill orange tip with black. Forehead, Breast, Belly white. Cheeks black. A black line from the bill to each eye; another from one eye to the other. Crown of the Head brown. A black and a white Collar. Back and Tail brown. Legs yellow. Weight 2 oz. Length $7\frac{1}{2}$ inches. On our shores in Summer.
2. Morinellus. *Dottrel*. Bill, Head, shafts of the Quills, Belly, tip of the Tail, Legs black. A broad white line above the Eyes. Cheeks, Throat, Thighs white. Breast and sides orange. The rest olive. Weight 4 oz. Migrates.
3. Pluvialis. *Green Plover*. Bill, Head, Back, Legs black. Breast brown. Belly white. Upper part of the body and breast spotted with green. Tail barred with black, green, and brown. Weight 9 oz. Length 11 inches. Migrates.

4. *Calidris. Sanderling.* Bill and Legs black. Head and back of the Neck ash colour, with long black spots. Back brownish grey. Beneath white. Tail of 12 pointed feathers ash colour. Coast of *Cornwall.*
5. *Oedienemus. Norfolk Plover.* A yellowish green bare space between the Eyes. Irides and Legs yellow. Above black. Beneath white. Knees swollen. Toes bordered by a membrane. Weight 18 oz.
6. *Himantopus. Long Legged Plover.* Bill black 2 inches long. Legs red, very long and slender. Wings extend beyond the Tail. Forehead, Breast, Belly, Tail white. Crown, Back, Wings black. *Scotland.*

RECURVIROSTRA. Bill curved upwards, flexible at the apex. Three Toes, webbed.

1. *Avocetta. Avocetta.* Bill $3\frac{1}{2}$ inches long. Above black and white. Beneath white. Legs blue and very long. Thighs naked. Frequent on our Eastern coast.

HÆMATOPUS. Bill compressed, obtuse. Toes 3, the middle connected to the exterior as far as the first joint.

1. *Ostralegus. Sea Pie.* Bill 3 inches, orange. Irides crimson. Tongue very short. Head,

Head, Neck, Shoulders black. Wings and Tail black and white. Beneath white. Legs pale red. Weight 16 oz. Length 17 inches. Frequent on the coast.

FULICA. Bill short, thick, convex. Forehead bare. Toes 4, finned. On Lakes and Rivers.

1. Atr. *Coot*. A thick, callous, red membrane above the Bill. Bill and Legs olive; Garter yellow. Belly ash colour. Margin of the Wings white. The rest black or very dark ash colour. Weight 26 oz. Toes scolloped.
2. Aterima. *Greater Coot*. Callus white. Garter red. Darker coloured and larger than the last.
3. Chloropus. *Water Hen*. Callus, Irides, upper part of the Bill and Garters red. Head, Neck, Breast black. Belly deep ash colour. Margin of the Wings white. The rest glossy olive brown. Fins of the Toes strait, narrow. Weight 15 oz. Length 14 inches.

RALLUS. Bill compressed, sharp. Nostrils oval. Toes 4. Body compressed.

1. Crex. *Land Rail*. Bill and Legs grey. Above black edged with light brown. Beneath white. Legs very long. Weight 7 oz. Frequent in *Ireland* and *Anglesea*.

2. Aqua-

2. Aquaticus. *Water Rail*. Bill slightly arched, slender, above black, beneath orange. Above black, the feathers edged with olive brown. Beneath ash colour. Base of the Wings white. Tail short. Legs redish, and near the Tail. Weight $4\frac{1}{2}$ oz. Length 12 inches.
3. Porzana. *Small spotted Water Hen*. Bill and Legs olive. Head brown spotted with black. Neck deep olive spotted with white. Back variegated with black, olive and white. Beneath ash colour and white. Weight $4\frac{1}{2}$ oz. Length 9 inches. *Lincolnshire*.

OTIS. Bill strong and a little hooked.
No back Toe.

1. Tarda. *Bustard*. On each side the lower Mandible a tuft of long Feathers. Bill and Legs greyish brown. Irides bright orange. Head and Neck ash colour. Back and Tail barred with black and red-brown. Quills black. Beneath white. Weight 25lb. Length 4 feet. The Female is much less, and wants the long Feathers from the Bill.

V. GALLINÆ.

Bill convex: the upper Mandible arched. Toes connected by a membrane at the bottom. Tail-feathers more than 12.

PHA-

PHASIANUS. Cheeks naked, smooth.
Spurs on the legs.

1. Colchicus. *Pheasant*. Bill horn colour. Cheek-membrane bright red. A tuft of black feathers near the Ears. Head and Neck tinged with rich green-purple. Beneath brown. Tail of 18 Feathers, long and of various colours. A sharp short spur. Weight 45 oz. Length 36 inches. The Pheasant, tho' lately introduced, now breeds spontaneously in this island.

TETRAO. A bare scarlet spot above the Eyes.

Legs feathered to the Feet.

1. Urogallus. *Cock of the Wood, or Mountain*. Bill yellow. Above streaked with transverse back and grey lines. Breast green. Belly black, with a few white spots. A white spot on the Scapulæ. Tail of 18 black feathers, with a few white spots. Length 32 inches. Weight 13lb. *Female*: Less. Throat red. Belly orange. Tail brown barred with black. *In the Highlands of Scotland.*
2. Tetrix. *Black Game, or Heath Cock*. Plumage black. A white spot on the Shoulders. Tail of 16 Feathers, forked. Thighs and Legs dark brown. Weight near 4lb. Length 22 inches. *Female*: Plumage mixt with red. Weight 2lb.

3. Lagopus,

3. Lagopus. *Ptarmigan*, or *White Game*. In Summer pale brown with dark spots. In Winter white. Feathered to the claw. Tail of 16 Feathers. Weight 14 oz. Length 16 inches. *In the Highlands of Scotland.*

4. *Grouse*, *Red Game*, or *Moor Game*. Bill black. Irides hazel. A white spot on each side the lower Mandible. Throat red. Head and Neck tawny red, mixt with black. Back red, with black spots. Beneath purplish brown, streaked with dark lines. Tail of 16 Feathers. Thighs pale red. Legs feathered to the Claws. Weight 19 oz. Length 15 inches. *Female*: Belly spotted with white. Weight 15 oz.

Legs Naked.

5. Perdix. *Partridge*. Bill white. Plumage orange, black and brown. A semilunar mark on the Breast. Tail of 18 feathers. Weight 15 oz. Length 13 inches. *Female* less.

6. Coturnix. *Quail*. Bill dusky. Head black. a yellowish line from the Crown to the Back. Chin and Throat whitish. Breast pale orange spotted with black. Back black and yellow. Tail of 12 feathers black and red. Length 7 inches. *Migrates.*

VI. PASSERES.

Bill conic, pointed. Nostrils ovale, broad, naked

COLUMBA. Bill strait, a little bent at the apex. Nostrils oblong, half covered by a soft tumid membrane. Tongue entire.

1. Oenas. *Pigeon, or Stock Dove.* Plumage deep bluish ash colour. Breast tinged with purple-green. Two black bars on the Wings, and one near the end of the Tail. Back white. All our tame Pigeons are varieties of this species.

2. Palumbus. *Ring Dove.* Above bluish ash colour. Breast tinged with purple. Belly dirty white. On the back of the Neck a semicircular white line. Weight 20 oz. Length 18 inches.

3. Turtur. *Turtle Dove.* Bill bluish brown. Irides yellow. Crown and Back ash colour mixt with olive. On the sides of the Neck a black spot edged with white. Wings brown. Breast purple mixt with yellow. Belly white. Circle round the eyes, and feet red. Claws black. Length 12 inches. Bucks, Gloucest. Shropsh. West of Engl.

ALAUDA. Bill subulate. Tongue bifid. The hind Claw not much bent, and longer than the Toe.

1. Ar-

1. *Arvensis*. *Sky Lark*. Lower Mandible, spot above the Eyes, soles of the Feet and under side of the Body yellow. Head and Breast spotted with black. Exterior web of the Quills edged with white. Weight $1\frac{1}{2}$ oz. Length 7 inches. Sings flying.
2. *Pratensis*. *Tit Lark*. Bill, spots on the Head, Breast and Back black. Above greenish brown. Breast yellow. Throat and Belly white. Sides of the Tail white. Length $5\frac{1}{4}$ inches.
3. *Less Field Lark*. Head and back of the Neck pale brown with dark lines. Back and Rump dirty green. Coverts of the Wings, first Quill, and sides of the Tail white. Hind Claw shorter. Legs brown. Larger than the last.
4. *Red Lark*. Above brown. Beneath red-brown with dark spots. Sides of the Tail white. A dark line across the Eyes, and above that a yellowish one. The third Quill long. Back Claw not very long. Size of the last. *Middlesex*.
5. *The less Crested Lark*. Above brown. Beneath whitish. Crest long. Feet red. Less than the Sky Lark. *Yorkshire*.
6. *Arborea*. *Wood Lark*. A white ring round the Head. Crown, Throat and Back spotted with black. Breast tinged with red. Belly white. Tail black edged with white.

white. Less than the Sky Lark. Sings flying.

7. Trivialis. *Grasshopper Lark*. Above green-brown spotted with black. Beneath yellow-white. Tail of 12 Feathers. long and rounded. Legs whitish. Less than the Tit Lark. *Shropshire*.

8. *Willow Lark*. Above yellow-brown, with dark spots. Beneath yellow-white. Tail dark brown.

STURNUS. Bill strait, subulate, and somewhat angular.

1. Vulgaris. *Stare or Starling*. Bill yellow, depressed; the base of the lower Mandible furrowed on each side. A prominent margin round the Nostrils. Tongue bifid, horny. Irides hazel. Plumage black tinged with green-purple; tips of the Feathers yellowish. Legs and Feet redish black.

2. Cinclus. *Water Ouzel*. Bill compressed, black. Eyelids white. Above brown. Throat and breast white. Belly red-brown. Tail black. Legs bluish before; behind black. Weight $2\frac{1}{2}$ oz. Length 7 inches.

TURDUS. Bill roundish, sharp-edged: upper Mandible notched, and bent at the apex. Nostrils naked, and half covered by a membrane.

1. Viscivorus. *Missel Bird*. Above brown-grey. Beneath yellow-white, with dark spots. Irides hazel. Tail of 12 Feathers, exteriors tipped with white. Inner Coverts of the Wings white. Weight 5 oz. Length 11 inches. Our largest singing bird.
2. Pilaris. *Fieldfare*. Bill yellowish tipped with black. Head and Rump ash colour. Back deep brown. Tail and Legs black. Beneath white. Breast redish with dark spots. Weight 14 oz. Length 10 inches. Migrates.
3. Iliacus. *Redwing*. Above brown-grey. Beneath whitish with brown spots. Sides and under Coverts of the Wings red-yellow. A yellow-white line athwart the Eyes. Weight $2\frac{1}{4}$ oz.
4. Muscus. *Throstle*. Above brown-grey. Beneath white with black spots. Throat and Breast redish. Inner Coverts of the Wings yellow. Weight 3 oz. Length 9 inches.
5. Roseus. *Rose coloured Ouzel*. Bill at the base redish, at the point black. A long pendent Crest. Head, Crest, Neck, Wings, Tail black, tinged with green-purple. Breast, Belly, Back rose colour with black spots. Legs dirty orange. *Middlesex, Norfolk*.
6. Merula. *Blackbird*. Plumage black. Bill and edges of the Eyelids yellow.

7. *Torquatus. Ring Ouzel.* Plumage black-brown, the edges of the feathers of a lighter colour. A white Crescent on the Breast. Length 11 inches.

AMPELIS. Bill strait, convex; upper mandible somewhat curved, and notched. Tongue cartilaginous, bifid.

1. *Garrulus. Chatterer.* A long Crest. Plumage ash colour, red, black, purple, yellow, white, brown. Red, horny, appendages from the tips of 7 of the small Quills. Length 8 inches. Rare in this Island.

LOXIA. Bill short, thick.

1. *Curvirostra. Crossbill.* Upper Mandible curved downward, the under upwards crossing each other. Male red. Female green, both varying with the seasons. *Shropshire.* Migrates.
2. *Coccothraustes. Grosbeak, or Hawfinch.* Bill, under side of the Body, and Legs redish. Head chesnut. Chin and Quills black. The ends of the middle Quills curved outwards. A black line from the Bill to the Eyes. Back brown. Weight 2 oz. Length 7 inches. *Shropshire.* Migrates.
3. *Pyrrhula. Bulfinch.* Bill, Crown, Coverts of the Wings, Tail black. Back of the Neck and Back grey. Coverts of the Tail and Vent white. Cheeks, Breast, Belly crimson. A white line
E across

across the Wings. The Breast and Belly of the *Female* dirty buff colour.

4. *Chloris. Greenfinch.* Plumage yellow-green. Exterior webs of the outmost feathers of the Tail yellow. Lower Belly white. Length $5\frac{1}{2}$ inches.

EMBERIZA. Bill conic, angular on each side; a hard knob within the upper Mandible.

1. *Nivalis. Greater Brambling.* Bill yellow tip with black. Head and Neck tawny. Back and Legs black. Beneath yellow-white. Rump yellow. Tail of 12 feathers, exteriors white. Coverts of the Wings white. Weight 1 oz. Length 7 inches. Migrates.

2. *Miliaria. Bunting.* Above olive-brown, with black spots. Beneath yellow-white. Edges of the Wings and Legs yellow. Sides of the Tail white. Length $7\frac{1}{2}$ inches.

3. *Citrinella. Yellow-hammer.* Crown, Chin, Throat, Belly yellow. Back of the Neck, less Wing-Coverts, part of the Quills, and part of the Tail green. Breast orange. Rump brown-red. Length 6 inches.

4. *Schoeniclus. Reed Sparrow.* Above black, edged with red. Beneath white. A white circle round the head of the Male. Length near 6 inches.

FRIN-

FRINGILLA. Bills strong, conic, strait, sharp.

1. Coclebs. *Chaffinch*. Bill, Crown, back and sides of the Neck, bluish. Forehead, Wings, Tail black. Three white lines across the Wings. Above the Eyes, Cheeks, Throat red. Belly reddish white. Female wants the red feathers.
2. Montifringilla. *Brambling, or Mountainfinch*. Back and Crown black edged with brown. Chin, Throat, Breast, and less Wing-Coverts orange; inner Coverts yellow. Quills edged with yellow. Belly whitish. Length 6 inches.
3. Carduelis. *Goldfinch*. Bill, Cheeks, back of the Head, Belly, tips of the Wings, spots on the Tail, Legs, white. Tip of the Bill, line from that to the Eyes, Crown, Wings, Tail black. Circle round the Bill red. Breast, Back, Rump, pale brown. Middle of the Wings yellow.
4. Spinus. *Siskin, or Aberdavine*. Bill white tipped with black. Head black. Belly white. The rest of the body yellow-green. Two middle feathers of the Tail black, the rest yellow with black tips. Length near 5 inches. Migrates.
5. Cannabina. *Greater red-headed Linnet, or Redpole*. Bill blackish, base of the under Mandible whitish. Head and Neck ash colour, on the Forehead a

E 2
dark

dark red spot. Back, Scapulars and Coverts red-brown. Quills black, with a white bar. Breast pale red. Sides yellow. Belly and sides of the Tail white. Length 5 inches. On the Sea coasts, and sometimes near *London*.

6. *Linaria. Less red-headed Linnet.* Plumage much like the former; but considerably less.

7. *Mountain Linnet or Twite.* Bill yellow. A brown spot above and below each eye. Head ash colour and black. Back brown and black. Breast black and white. Rump tawny red. Wings and Tail edged with white. Rather less and more taper than the common Linnet.

8. *Linnet.* Head black and ash colour. Back black and brown. Throat, two white lines with a brown one in the middle. Breast deep red. Belly white. Wings black, brown and white. Tail brown, edged with white. Length $5\frac{1}{2}$ inches.

9. *Domestica. Sparrow.* Bill, spot under each Eye, Chin, under side of the Neck, and Quills, black. Crown and sides of the head brown ash colour. Cheeks and Belly white. Back black and red.

10. *Montana. Mountain Sparrow, or White Cap.* Bill, spot on the Throat, and under each Ear, black. Under the Eyes, back of the Neck, and under side of the
the

the Body white. Back brown and black. Legs pale red.

MUSCICAPA. Bill triangular, the upper Mandible notched ; broad at the base ; surrounded with short bristles.

1. Grisola. *Fly-catcher*. Bill, Legs, Feet black. Above brownish grey. Beneath white. Quills edged with yellow. Throat and Sides tinged with red. Mouth yellow. Length $5\frac{1}{2}$ inches.

MOTACILLA. Bill strait, slender. Tongue jagged.

1. Luscinia. *Nightingale*. Head and Back tawny olive. Tail tawny red. Beneath pale ash colour ; lower Belly white. Irides hazel. Eyes large. Legs deep ash colour. Weight 1 oz. Length 7 inches.
2. Modularis. *Hedge Sparrow*. Head deep brown and ash colour. Back and Tail blackish, some of the feathers edged with brown. Rump brown tinged with green. Throat and Breast bluish ash colour. Belly dirty white. Legs redish. Weight not quite 1 oz.
3. Hippolais. *Petty-chaps*. Above greenish dark ash colour. Belly white. Breast yellowish. Mouth red. Legs lead colour. Quills edged with green. Length 6 inches.

4. Sylvia. *White Throat*. Above brown ash colour. Beneath white. Breast and Belly tinged with red. Tail edged with white. Legs tawny brown. Mouth yellow. Length 6 inches.
5. Alba. *White Waterwagtail*. Bill, Mouth, Head, Neck, Back, Tail, Legs black. Breast, Belly and sides of the Tail white. Tail and back Claw very long. Weight 6 drams. Length 8 inches.
6. Flava. *Yellow Waterwagtail*. Above olive green. Beneath yellow. A yellow line above the Eyes. Tail black edged with white. Throat spotted with black.
7. *Grey Waterwagtail*. Crown, Neck, Back ash colour. Throat black. A white line above and below the Eyes. Rump, Breast, and Belly yellow. Tail like the two former, but longer.
8. Oenanthe. *Wheat Ear*. A black and a white line across the Face. Head and Back ash colour tinged with red. Beneath yellowish white. Bill, Mouth, Quills, and upper half of the Tail black; the other half and Rump white. Size of a Sparrow. Migrates.
9. Rubetra. *Whinchat*. Above red-brown with black spots. Beneath reddish yellow. A white stroke above the Eyes, and a broad black one under it. Two white spots on the Wings. Tail black and

and white. Bill, Mouth and Legs black. Weight 1 oz.

10. Rubicola. *Stone Chatter*. Bill, Mouth, Head, Neck, Back, Tail, Legs black. Sides of the Throat and Rump white. Beneath reddish yellow. White spots on the Wings. Size of a Linnet.
11. *Goldfinch*. Bill, Head, Back, first Quills, middle of the Tail, Legs black. Forehead, spots on the Coverts and sides of the Tail, also the exterior webs of some of the Quills, and all the underside of the body white. Less than the Hedge Sparrow.
12. Atricapilla. *Blackcap*. Bill, and Crown black. Neck ash colour. Back green. Beneath pale ash colour. Quills and Tail edged with green. Legs lead colour. Weight $\frac{1}{2}$ oz.
13. Phoenicurus. *Redstart*. Bill, Cheeks, Throat, Legs black. Forehead white. Crown, Neck, Back blue grey. Breast, Rump, Tail red. Wings and 2 middle feathers of the Tail brown. Weight 6 drams. Length 5 inches.
14. Rubecula. *Redbreast*. Bill and Legs blackish. Forehead, Chin, Throat, and Breast yellow-red. Above green-ash colour. Belly white. Weight $\frac{1}{2}$ oz. Length 6 inches.
15. Troglodytes. *Wren*. Above red-brown, with transverse black lines. Beneath yellowish white. Mouth yellow. A

E 4
white

white stroke above the Eyes. Weight 3 drams. Length $4\frac{1}{2}$ inches.

16. *Regulus. Golden-crested Wren.* Crown scarlet; a yellow line on each side. Above dark green. Beneath white with a green tinge. Legs yellow. Weight 70 grains. Length 4 inches.

17. *Trochilus. Willow Wren.* Above green-ash colour. Wings and Tail brown, edged with green. Beneath yellowish white. A yellowish line above the Eyes. Mouth yellow. Weight 2 drams. Length 5 inches.

PARUS. Bill, short, strong, entire, bristles at the base. Tongue blunt, with bristles at the end.

1. *Major. Great Titmouse.* Bill, Head, Throat, black. Back green. Beneath green-yellow, with a black line in the middle. Rump bluish. Quills tipped with blue and white. Tail edged with white. Legs lead colour. Weight scarce 1 oz. Length 6 inches.
2. *Coccyzus. Blue Titmouse.* Crown, Wings, Tail blue. Forehead, Checks white. Back yellow-green. Beneath yellow. A white bar across the Wings. Legs lead colour. Weight $3\frac{1}{2}$ drams. Length 5 inches.
3. *Aster. Colemouse.* Bill, Head black, a white spot on the hind part of the latter. Above green grey. Beneath white. Wing-

Wing-coverts tipped with white. Legs bluish. Weight 2 drams. Length near 5 inches.

4. *Palustris*. *Marsh Titmouse*. Head black. Checks white. Above greenish. Beneath white. Legs lead colour. Weight above 3 drams.
5. *Caudatus*. *Long-tailed Titmouse*. Bill black, thick, and convex. Crown white. Coverts of the Wings black. Tail black and white and remarkably long.
6. *Biarmicus*. *Least Butcher Bird, or bearded Titmouse*. Bill short, strong, convex, yellow. Head grey. A black tuft beneath each Eye. Plumage red-yellow. Tail very long. Legs black.

HIRUNDO. Bill short, slender, a little curved, depressed at the base. Mouth very wide. Legs small. Tail forked.

1. *Rustica*. *Swallow*. Above purplish black. Beneath reddish white. A red spot on the Forehead and under the Chin. Length 7 inches. Mouth black.
2. *Urbica*. *Martin*. Head and Back purple-black. Breast, Belly, Rump white. Feet covered with white down. Mouth yellow. Length 6 inches.
3. *Riparia*. *Sand Martin*. Above mouse colour. Beneath white. Feet black. A mouse coloured ring round the neck. Length 5 inches.

4. *Apus*.

4. *Apus. Black Martin, or Swift.* Black, except a white spot on the Chin. All the Toes stand forward. Weight not quite 1 oz. Length near 8 inches.

CAPRIMULGUS. Bill short, a little hooked, with bristles round the base. Mouth very wide. Legs feathered below the knees. Tail roundish.

1. *Europæus. Goatsucker.* Plumage black, white, brown, and ash colour intermixed. Mouth purple. Irides hazel. Weight $2\frac{1}{2}$ oz. Length 10 inches.

CLASS

CLASS III.

AMPHIBIA.

Lungs arbitrary. Heart with one ventricle.
Penis double.

I. REPTILES.

Breathe through the Mouth. Feet 4.

RANA. No Tail. Forefeet, 4 toes dis-
united. Hindfeet, 6 toes webbed.

1. Bufo. *Toad*. Back broad, black beset with
tubercles. Belly swollen, yellow with
black spots. Crawls.
2. Temporaria. *Frog*. Less than the Toad.
Back smooth. Margin of the upper
jaw white. Leaps.

LACERTA. Tail.

1. Agilis. *Common Lizzard, or Swift*. Tail
round, scaly. Five Toes and Nails on
each Foot. Belly black, spotted.
Green Lizzard, a variety.
2. Vulgaris. *Common Est*. Pale livid colour.
A brown line on each side the Head,
continued

60 AMPHIBIA. SERPENTS.

continued along the back. Forefeet 4 Toes ; Hindfeet 5, without Nails. *Pet. cent. 2. 116.*

3. *Palustris. Water Eft, or Newt.* Length 3 to 4 inches. Above black-brown. Beneath deep yellow, spotted. Tail compressed. Feet like the former. *Pet. cent. 2. 111.*

II. SERPENTS.

Breathe through the Mouth only. No Legs. No Fins. No Ears.

COLUBER. Scuta on the Belly. Scales under the Tail.

1. *Berus. Viper.* Ash coloured. A dark indented line along the middle of the Back. Belly tinged with purple, spotted with black. Throat pale. Irides orange ; Pupil black. Scuta 146. Scales 39. Length about 18 inches. *Pet. cent. 2. 103.*
2. *Prester. Black Viper.* Entirely black. Tail very short. Scuta 153. Scales 32. Exceedingly poisonous. *Pet. cent. 2. 104.*
3. *Natrix. Snake.* Dark brown. Belly spotted with white. Throat yellowish white. Sides of the Head white with transverse black lines. Double row of Teeth. Tail sharp. Scuta 170. Scales 60. *Pet. cent. 2. 101.*

ANGUIS.

ANGUIS. Scales under the Belly and Tail.

1. Fragilis. *Blind Worm*. Scales small, soft, compact. Back yellowish ash colour. Belly black. Sides streaked with black and white. Tail long, obtuse. Colour varies.

III. NANTES.

Breathe both through Gills or Spiracles, and through the Mouth. No Scales. Rays of their Fins cartilaginous.

PETROMYZON. Spiracles 7, on the side of the Neck. No Gills. Aperture on the Top of the Head. No pectoral or dorsal Fins.

1. Marinus. *Lamprey*. Rows of Teeth 20. Mouth round. Two dorsal Fins. Back blackish blue, spotted. Belly white. A white spot on the top of the Head. Length about 2 feet. In the Sea and large rivers.
2. Fluviatilis. A single row of small teeth in the verge of the Mouth, besides those within. The posterior dorsal Fin angulated. Back bluish black. Belly silver white. Length about 1 foot. In rivers only.
3. Branchialis. *Lamprey Eel*. Back black-brown. Belly silver white. Posterior dorsal Fin

Fin strait. Length 5 or 6 inches.
Frequent in the *Isis*, and *Mersea*.

RAJA. Spiracles 5 on each side of the under part of the Neck. Body flat. Mouth in the under part of the Head.

1. Batis. *Skate*, or *Flaire*. Back ash colour with black spots, smooth. Belly white. A single row of Spines in the Tail. Length 2 or 3 feet. Weight sometimes 100lb.
2. Oxyrinchus. *Sharp-nosed Skate*. Back brown with 10 sharp tubercles along the middle. Belly white. Nose longer and sharper than in any other of this genus. Weight 8 or 10lb. *Dale Harw.* 421.
3. Fullonica. *White Horse*. Back yellowish, spotted with black and covered with Spines. One row of Spines on the Eyes, and two on the Tail.
4. Pastinaca. *Fire-flaire*. Back gibbous. Body smooth. Nose sharp. Irides yellow. Tail long, without Fin, terminated by a sharp point.
5. Clavata. *Thorn-back*, or *Maid*. Back covered with Spines. A transverse cartilage across the Belly. Teeth tubercular. Tail, longer than the whole Body, with a single row of Spines.

SQUALUS. Spiracles 5 on each side the Neck. Body oblong and roundish. Mouth in the anterior part of the Head.

1. *Acanthias. Hound Fish, or Picked Dog.* Head depressed. Mouth beneath, semilunar. Teeth 3 rows. Foramina 2 between the Eyes. Lateral line strait. Skin rough. Back bluish grey. Belly white. Eight or 9 white spots on the Back. No anal Fin. Dorsal Fins spinous. Usual length 3 or 4 feet. Skin used by Cabinet-Makers, &c.
2. *Squatina. Monk or Angel Fish.* Skin rough. Teeth 3 rows. Mouth at the extremity of the Head. Pectoral Fins large. Dorsal Fins near the Tail. No anal Fin.
3. *Galeus. Tope.* Snout pellucid. Mouth beneath, semicircular. Three rows of sharp Teeth. Two dorsal, pectoral, ventral and anal Fins. Nostrils near the Mouth. Foramina near the Eyes. Length 4 or 5 feet.
4. *Canicula. Cat Fish, or Bounce.* Mouth beneath. Teeth several rows, small, sharp, curving inwards. Snout obtuse. Back broad. Belly flattish. Two dorsal Fins. Ventral Fins large. Nostrils wide. Length about 3 feet.
5. *Catulus. Morgay, or Rough Hound.* Back irregularly spotted. Belly white. Head punctured. Dorsal Fins near the Tail. Two anal Fins, alternate. Ventral Fins concreted. Body slender.
6. *Carcharias. White Shark.* Teeth 6 rows, serrated. Back flat. First dorsal Fin near

near the middle of the Back. Pectoral Fins large. No anal Fin. Tail divided; the upper part largest. Skin very rough. Weight sometimes 1000 lb.

7. *Mustelus. Smooth Houndfish.* Teeth numerous, obtuse. Back brown. Body roundish, oblong. Dorsal Fins 2; anal 1. Pectoral Fins short. Nostrils wide.

8. *Glaucus. Blue Shark.* Nose long, sharp, depressed, and punctured. A triangular fossule on the Back. No Foramina near the Eyes. Mouth beneath. Teeth large, serrated. Back dark blue. Belly silver white. Dorsal Fins 2. Pectoral Fins long and pointed. Skin not very rough. Length 7 or 8 feet. *Dale Harw.* 420. *Borl. Cornw.* 264.

LOPHIUS. Spiracle 1. behind the pectoral Fins. Gills 3. Teeth numerous, slender, sharp.

1. *Piscatorius. Frog-fish, or Sea Devil.* Head as large as the whole body. Mouth large. Eyes distant; Pupil divided by a transverse line. No Nostrils. Several long Spines on the Head. Body surrounded with little appendages.

ACIPENSER. A single narrow Spiracle on each side. Mouth beneath, retractile, without Teeth.

1. *Sturio. Sturgeon.* Skin rough. Nose long, flat, sharp. Nostrils with a double aperture.

Four appendages from the under Jaw.
Five rows of spinous tubercles on the
Back. One dorsal Fin. Tail bifid,
the upper segment longest.

TETRODON. Maxillæ bony, apex bi-
partite. Aperture narrow. No ven-
tral Fins.

1. Mola. *Sunfish*. No Scales. Skin hard and
rough. Back blackish. Belly white.
Tail truncated, with a short semicircu-
lar Fin, joined to the dorsal and anal.
Body compressed, appearing like the
Head of a fish only. *Dale Harw.* 427.
Borl. Cornwall. 267.

CYCLOPTERUS. Head obtuse. Teeth
in the Jaws. The ventral Fins infun-
dibuliform.

1. Lumpus. *Lump Fish, Sea Owl, or Cockpaddle*.
Nostrils single. Back ridged, and be-
set with sharp tubercles. Colour, black
mixt with pale red and white. Dorsal
Fin long. Tail-Fin distinct.
2. Liparis. *Sea Snail*. Body naked. Dorsal,
anal and tail Fins united. A round
spot like the impression of a seal under
the Throat. Length about 3 inches.

SYGNANTHUS. Nose roundish, com-
pressed. Mouth a small round aperture at
the extremity of the Head, and covered
by a kind of valve: Gills covered in
F the

the same manner. Body long. No ventral Fins.

1. Typhle. *Needle Fish*. Body hexangular to the Anus. One dorsal Fin. Length 5 inches. Diameter $\frac{1}{2}$ of an inch.
2. Acus. Body, to the Anus, heptangular, and covered with 20 laminæ, the Tail with 36. Length $4\frac{1}{2}$ inches.
3. Ophidon. *Sea Adder*. Body cylindrical. Dorsal Fin only. Colour greenish dusky grey. Length about 9 inches.

CLASS

CLASS IV.

FISHES.

Breathe by Gills, not arbitrarily. Rays of their Fins bony. Heart with one ventricle. No external parts of Generation.

I. APODES.

No ventral Fins.

MURÆNA. Body long, slender, cylindrical. Nostrils tubular. Apertures of the Gills near the pectoral Fins. Eyes covered by a membrane.

1. Ophis. *Spotted Sea Serpent*. Body very small in proportion to its length. Mouth large. Teeth point inwards. Back spotted with white. Belly and Fins whitish. Tail naked, pointed. Length from 3 to 4 feet.
2. Anguilla. *Ecl.* The lower Maxilla longer than the upper. Dorsal, anal and tail Fins united. Iris red. Lateral line ascends towards the Head. Vertebrae 116. *Will.* 109. *Raj.* 37.
3. Myrus. *Flat-tail'd Sea Serpent*. Back dark olive spotted with white. Body compressed.

pressed. Back Fin, surrounding the Tail as in the former, edged with black. *Raj.* 36. *Hill.* 237.

4. Conger. *Conger Ecl.* Fins like the last species. Lateral line strait, broad, white. Back dark olive. Belly white. Length from 5 to 8 feet, and thick as a man's thigh. *Will.* 3. *Raj.* 37.

ANARHICHAS. Foreteeth conic, diverging. Tail Fin distinct.

1. Lupus. *Sea Wolf.* Head and Mouth large. Teeth long and numerous. Eyes prominent. Body thick, lubricous and variegated. Pectoral Fins large and roundish. Dorsal Fin long but not high. Length 4 or 5 feet. *Raj.* 40. *Will.* 130.

AMMODYTES. Head compressed, and narrower than the Body. Lower Mandible sharp. Small Teeth in the fauces only. Gill-membrane has 7 rays. Body long and roundish. Scales hardly visible. Tail distinct.

1. Tobianus. *Sand Ecl or Launce.* Lateral line double. Anus nearer the Head than Tail. Dorsal Fin almost from Head to Tail. Belly white, with 3 longitudinal lines. *Dale Harw.* 426. *Will.* 113.

II. JU-

II. JUGULARES.

Ventral Fins before the pectoral.

CALLIONYMUS. Upper Lip duplicate. Eyes near together. Apertures of the Gills in the Neck. No Scales.

1. *Lyra.* *Lyre.* The rays of the first dorsal Fin equal to the length of the Body. The upper Mandible longer than the under. *Dale Harw.* 431.

2. *Dracunculus.* Upper mandible longest, and hooked. Head large, compressed. First ray of the anterior dorsal Fin reaching to the Tail. Colour yellow, pearl colour and blue. *Borl. Corn.* 270.

TRACHINUS. Head beset with Tubercles. Eyes near together. Two dorsal Fins, the first short. Anus near the Breast.

1. *Draco.* *Weaver.* Under Maxilla longest. Body compressed. Dorsal and tail Fins serrated. Lateral line strait, yellow. A strong Spine near the valve of the Gills. A deep sulcus on the back. The anterior dorsal Spines venomous.

GADUS. Head smooth. Rays of the Gill
F 3 mem-

membrane 7. Body oblong. Pectoral Fins ending in a point.

With 3 dorsal Fins. A Cirrus or Beard from the lower Jaw.

1. *Aglefinus. Haddock.* Upper Maxilla longest. Lateral line black. A brown spot on the left side. Back ridged. Belly white. Tail a little forked.

2. *Morhua. Cod.* Upper Maxilla longest. Lateral line white. Colour variegated. Tail not forked, and its first ray spinous.

3. *Luscus. Rib, or Blinds.* The first ray of the ventral Fins long. The lateral line dotted and curved. Body compressed. Back olive. Belly white. *Raj. 54. Will. 169.*

4. *Barbatus. Whiting Pent.* Body broad. Back convex. Lateral line much curved. Two blackish spots at the roots of the pectoral Fins. Tail even. Anus near the Head. Punctures on each side the lower Maxilla 7. *Raj. 55. Will. app. 22.*

5. *Minutus. Peor.* Back convex. Anus near the center. Punctures in the Maxilla 9 on each side. Length $1\frac{1}{2}$ inch. *Raj. 50—163. Will. 171. Berl. 268.*

With 3 dorsal Fins, and no Cirrus.

6. *Merlangus. Whiting.* Back convex, dusky; the rest of the Body white. Upper Jaw longest. Lateral line curved, Tail

Tail even. A black spot on each side near the root of the pectoral Fin. *Raj.* 55. *Will.* 170.

7. *Carbonarius*. *Cole Fish*, or *Raw Pollack*. Colour black mixt with dusky yellow. Under Jaw longest. Lateral line broad, white, strait. Size of the last species. *Raj.* 54.

8. *Pollachius*. *Whiting Pollack*. Back convex. Lower Jaw longest. Lateral line broad, curved. Tail lunated. Body thick. Length about 12 inches. *Raj.* 53. *Will.* 167. *Dale Harw.* 428.

With 2 dorsal Fins.

9. *Merluccius*. *Hake*. Body long and roundish. Under Jaw longest. Lateral line curved. Head broad. Back brownish grey. Belly white. Tail even. Length about 2 feet. *Raj.* 56. *Will.* 174. *Dale Harw.* 429.

10. *Molva*. *Ling*. Upper Jaw longest; a cirrus from the lower. Head depressed. Mouth large. Back convex, black-brown. Body long, and roundish. Tail a little rounded. *Raj.* 50. *Will.* 175.

11. *Lota*. *Eel Pout*. Body long, slender and lubricous. Head broad, depressed. Jaws equal. A cirrus from the lower Jaw. Tail nearly oval. *Raj.* 67, 68, 3. *Will.* 125.

12. *Mustela*. *Whistle Fish*, *Rockling*, or *Sea Loach*. A deep furrow in the anterior part of the back. Tail rounded. Body slender.

slender. Length 8 inches. *Raj.* 67, 164. *Will.* 121.

BLENNIUS. Head decliving from the eyes forward, and covered. Rays of the Gill-membrane 6. Rays of the ventral Fins 2. Anal Fin distinct.

1. *Galerita.* *Crested Sea Lark.* A triangular crest, red at the edges, between the Eyes. Body variegated. Dorsal Fin nearly from Head to Tail. *Will.* 134
2. *Pholis.* *Sea Lark, Mulgrasse, or Bulcard.* Upper Jaw longest, and sharp. Colour variegated. Tail rounded. Length 6 or 7 inches. Dorsal Fin almost from Head to Tail. *Raj.* 73. *Will.* 133.
3. *Gunnellus.* *Butter Fish.* Colour, brown, olive, green, white. Ten black spots, with white edges, on each side the dorsal Fin. Mouth large, curving upwards. Eyes small and covered with a cuticle. Scales extremely minute. Length 6 inches. *Raj.* 144. *Will.* 113. *Pet. gaz.* 1: 51. 5.

III. THORACICI.

Ventral Fins under the pectoral.

GOBIUS. Eyes very near each other, with 2 small punctures between. Rays of the Gill-membrane 4. Ventral Fins united, forming a kind of funnel.

5. *Niger.*

1. Niger. *Sea Gudgeon*, or *Rock Fish*. Back brown, whitish, yellowish, blue, green, olive, black. Tail, dorsal and anal Fins pale blue. Belly yellow. Rays of the posterior dorsal Fin 14. Eyes covered by one common membrane. *Will.* 206. *Raj.* 76. *Dale Harw.* 429.

COTTUS. Head broader than the Body and spinous. Rays of the Gill-membrane 6.

1. Cataphractus. *Pegge*. Body octangular, beset with hard tubercles; Tail hexangular. Two cirri on the upper Jaw; several on the lower. Anus near the center. Tail rounded. *Will.* 211. *Raj.* 77. *Dale Harw.* 430.
2. Scorpius. *Father laster*. Upper Jaw longest. Anterior part of the Body depressed. Back brown. Sides streaked transversely with black. Rays of the first dorsal Fin 11. Of the second 16. Tail rounded. *Raj.* 145. *Will.* 138.
3. Gobio. *Ball-head*, or *Miller's Thumb*. Two Spines on the Head. No Scales on the Body. Back brown with black spots. Belly whitish. Fins yellowish. Rays of the first dorsal Fin 7. Of the 2d. 16 or 17. Length 4 or 5 inches. In rivers and rivulets. *Will.* 137. *Raj.* 76.

ZEUS. Head and Body remarkably compressed. Upper lip sheathed in a transverse membrane.

. 1. Faber.

1. Faber. *Dorcee*. Head and Mouth large. Colour olive tinged with gold colour. A large black spot on each side. Lateral line much curved. Ten prickly rays on the anterior dorsal Fin. Spines on the Back and Belly. Tail rounded. *Raj.* 99. *Will.* 294.

PLEURONECTES. Both Eyes on one side of the Head. Body extremely compressed. One side white.

Eyes on the right side.

1. Hippoglossus. *Holibut* in the South: *Turbot* in the North. Body smooth. Rays of the dorsal Fin 105. *Raj.* 33. *Will.* 99.
2. Plateffa. *Plaife*. Body smooth, with round red spots on the upper side. Six tubercles on the head. Rays of the dorsal Fin 76. *Raj.* 31. *Will.* 96.
3. Fleffus. *Flounder*. Lateral line rough. Short spines on the right side of the Fins. Rays of the dorsal Fin 60, 61, or 62.
4. Limanda. *Dab*. Scales fringed with short spines. Body broad. The upper side spotted with pale yellow. Short spines at the roots of the dorsal and anal Fins. Lateral line curved. Rays of the dorsal Fin 78 or 79. *Raj.* 32. *Will.* 97.
5. Solea. *Saal*. Body oblong. Scales rough. Upper Jaw longest. Lateral line strait. Anus between the ventral Fins. Rays of the dorsal Fin 91. *Raj.* 33. *Will.* 100.

Eyes

Eyes on the left side.

6. Rhombus. *Pearl*. Body smooth, scaly. *Raj.* 31. *Will.* 95.

7. Maximus. *Turbot*, in the South: *Bret* in the North. Body rough, and not scaly. Several rows of Teeth. Rays of the dorsal Fin 64; anal 48; pectoral 11. *Raj.* 31. *Will.* 95.

SPARUS. Teeth like those of Quadrupeds. Lips duplicate. Valve of the Gills scaly. Body compressed.

1. Pagrus. *Sea Bream*. Colour reddish. At the roots of the dorsal and anal Fins the skin forms a sinus. Body broad. Back and Belly ridged. One dorsal Fin. *Will.* 312. *Raj.* 131. *Charlt.* 139.

Labrus

LABRUS. Teeth sharp. Lips simple. Rays of the Gill-membrane 6; Valve scaly. Rays of the dorsal Fin alternately soft and ridged.

1. Tinca. *Wrasse*, or *Old wife*. Snout curving upwards. Tail circular. Body thick, compressed. Scales large. Colour variegated with red, brown, yellow. Rays of the dorsal Fin 26. *Raj.* 136. *Will.* 319.

PERCA. Valve of the Gills scaly, serrated; rays of the membrane 7. Fins spinous. Scales hard and rough.

1. Flu-

1. *Fluviatilis*. *Pearch*. Two dorsal Fins, the first of 14, the second of 16 rays. Ventral Fins red. On each side 6 transverse black lines. A black spot at the end of the anterior dorsal Fin. In lakes and rivers. *Will.* 291. *Raj.* 97.
2. *Labrax*. *Basse*. Two dorsal Fins, the second 14 rays. Back blackish. Belly silver white. Shaped like the Salmon. Tail a little forked. Length 3 feet. *Will.* 271. *Raj.* 83.
3. *Cernua*. *Ruff*. One dorsal Fin, of 27 rays, 15 of which are spinous. Head full of cavities. Colour brown-yellow, with black spots. Length 5 inches. In many of our rivers. *Will.* 334. *Raj.* 144.

GASTEROSTEUS. Gill-membrane hath 3 rays. Ventral Fins behind the pectoral, but above the sternum. Dorsal Spines distinct.

1. *Aculeata*. *Stickle-back*. One dorsal Fin the whole length of the back, with 3 anterior Spines. Head and Back blackish; the rest of the Body silvery. Body compressed. Eyes on the sides of the Head. Tail even. Frequent in our rivers. *Raj.* 145. *Will.* 341.
2. *Pungitius*. *Less Stickle-back*. Ten dorsal Spines. Much like the former, but less. *Raj.* 145. *Will.* 342.

3. *Spina-*

3. *Spinachia*. *Great Sea Stickle-back*. Dorsal Spines 15. Length 6 or 7 inches. A sea fish. *Will.* 340. *Raj.* 145.

SCOMBER. Head and Body compressed, smooth. Tail forked. Rays of the Gill-membrane 7. Spurious Fins near the Tail.

1. *Scomber*. *Mackrel*. Spurious Fins 5. A short Spine at the Anus.
2. *Thynnus*. *Tunny-fish*. Spurious Fins 9 above, 8 beneath. A Furrow near the ventral Fins.
3. *Trachurus*. *Horse Mackrel*, or *Scad*. Lateral line curved, prickly, serrated. A Furrow in the middle of the Back. Rays of the first dorsal Fin 8; 2d 34; anal 30.

MULLUS. Head scaly, compressed, decliving from the Crown to the Nose. Gill-membrane with 3 Rays. Body with large Scales, easily deciduous. Very small towards the Tail.

1. *Surmuletus*. *Surmullet*. Cirri 2. Head smooth. Colour brown olive, with 4 longitudinal yellow lines on each side. Fins and Tail yellow stained with scarlet. Rays of the 2d dorsal Fin 8. *Cornwall.* *Raj.* 91. *Will.* 285.

TRIGLA:

TRIGLA. Head armed with rough lines.
Gill membrane with 7 Rays. Three
Digits to the pectoral Fins.

1. Lyra. *Piper*. Nose long, bifid; Nostrils
tubular. A large Spine above each
pectoral Fin. Spots 70 on each side.
Raj. 89. *Will.* 282. *Dale Harw.* 431.
2. Gurnardus. *Grey Gurnard*. Nose bifid; 2
Spines at each eye. Back spotted with
black and red. Pectoral Fins pale.
Raj. 88. *Will.* 279.
3. Cuculus. *Red Gurnard*. Nose somewhat
bifid. Valve of the Gills striated.
Lateral line imperfect. Colour intirely
red. *Raj.* 89. *Will.* 281.
4. Hirundo. *Tub Fish*. Head square, spinous.
Three cirri between the pectoral and
ventral Fins. Lateral line prickly.
Sides variegated with purple green and
white. Pectoral Fins black, *Raj.* 88.
Will. 280.

IV. ABDOMINALES.

Ventral Fins on the Abdomen behind the
pectoral.

COBITIS. Eyes in the upper part of the
Head. Gill-membrane with 4 to 6
rays. Valve closed beneath. Body
compressed, and nearly of an equal
thickness.

1. *Barbatula*. *Groundling*, or *Loach*. Cirri 6. Head without Spines. Body smooth, spotted. Dorsal Fin 8 rays. Irides yellow. Length 3 inches. *Raj.* 124. *Will.* 265.

2. *Tænia*. *Bearded Loach*. Cirri 6. Upper jaw longest. A forked Spine under each Eye. No Teeth, nor lateral line. Dorsal Fin of 9 rays. Length 3 inches. In lakes and ponds. *Raj.* 124. *Will.* 265, 266.

SALMO. Head smooth. Teeth in the Jaws and on the Tongue. Gill-membrane 4—10 rays. Dorsal Fin near the Head.

1. *Salar*. *Salmon*. Upper Jaw longest. Rays of the anterior dorsal Fin 15. Second without Rays. Lateral line strait, with a few black spots above and below. Tail lunated. *Raj.* 63. *Will.* 189.

2. *Eriox*. *Grey*. Spotted all over with grey spots. Tail equal. Not quite so large as the Salmon. *Raj.* 63. *Will.* 193.

3. *Trutta*. *Salmon Trout*. Jaws equal. Dorsal Fin 12 rays, with black spots. Pectoral Fins 13 rays, with 6 spots. Tail even. Head and sides sprinkled with black spots surrounded with brown. *Raj.* 63. *Will.* 193.

4. *Fario*. *Trout*. Lower Jaw longest. Sides spotted with red. Tail lunated. Rays of

of the anal Fin 10. *Raj.* 65. *Will.* 199.

5. *Carpio*. *Gilt Charre*. Five rows of Teeth in the Palate. Irides white. Sides and Belly silvery. Black spots on the Back. Eight punctures on each side the lower Jaw. Body broader than the Trout. *Raj.* 66. *Will.* 197.

6. *Alpinus*. *Red Charre*. Lower Jaw longest. Irides grey; pupil black. Rays of the Gill-membrane 10. Rays of the dorsal Fin 12. Back blackish. Sides pale blue. Belly orange. Ventral Fins red; external margin white. Tail lunate. Length 12 or 13 inches. *Win- andermere, Westmerl.* *Raj.* 65. *Will.* 196.

7. *Eperlanus*. *Smelt*. Dorsal opposite to the anal Fin. Head diaphanous. Rays of the anal Fin 17. Back convex. Lateral line strait. *Raj.* 66. *Will.* 202.

8. *Lavaretus*. *Schelley*. Teeth scarce visible. Upper Jaw longest. Rays of the dorsal Fin 14. Lateral line strait. Scales larger than those of the Trout. Sides and Belly silver white. Shaped like a Herring. *Hulswater, Cumberl.* *Raj.* 61. *Will.* 183.

9. *Thymalus*. *Grayling, or Umber*. Upper Jaw longest. Dorsal rays 23; those of the Gills 9. Body narrow. Teeth extremely minute. Length 13 or 14 inches.

inches. Scales large, semicircular, and not imbricated. *Raj.* 62. *Will.* 187.

ESOX. Under Jaw longest, punctured. Teeth in the Jaws and Tongue. Body long. Dorsal Fin near the Tail. Rays of the Gill-membrane 14.

1. *Officus.* *Great Gar Fish.* Upper Jaw longest. Mouth very large. Eyes small, Iris yellow. Scales imbricated and hard. Tail quadrangular. Body long and small. Length 2 feet. *Sussex coast,* *Hill.* 223.

2. *Lucius.* *Pike.* Head compressed behind; depressed before. Body somewhat quadrangular. Teeth numerous regular. Lateral line strait. Tail forked; with 19 rays. *Raj.* 112. *Will.* 236.

3. *Belone.* *Horn Fish, or Gar Fish.* Snout long, slender, pointed. Body long, small. Back olive-black. Sides yellowish. On the Sea coast. *Raj.* 109. *Will.* 231. *Dale Harw.* 433.

MUGIL. No Teeth. Rays of the Gill-membrane 7. Lips membranous. Scales imbricated, cover both the Body and the Head.

1. *Cephalus.* *Mullet.* Dorsal rays 5. Mouth small. Eyes large, distant, and placed near the extremity of the Head; Iris white; pupil black. Back brown-grey. Sides and Belly silver white. No lateral line. Ventral and anal Fins
G white.

82 FISHES. ABDOMINALES.

white. Dark longitudinal lines on the sides. *Raj.* 84. *Will.* 274.

CLUPEA. Rays of the Gill-membrane 8. Belly very acute, serrated.

1. Harengus. *Herring*. Under Jaw longest. Back dusky blue. Dorsal rays 19. Tail forked, rays 18. *Raj.* 103. *Will.* 219.
2. Sprattus. *Sprat*. Under Jaw longest. Dorsal rays 17. A dark spot on each side near the Gills. Length 4 or 5 inches. Vertebrae 48. *Raj.* 105. *Will.* 221.
3. Alosa. *Shad*, or *Pilchard*. Apex of the upper Jaw bifid. Black spots from 4 to 7 on each side. Dorsal rays 19; Tail 19. Length above four times its breadth. Vertebrae 55. *Raj.* 104. 105, *Will.* 223, 227.

CYPRINUS. No Teeth. Rays of the Gill-membrane 3. Body smooth.

1. Barbus. *Barble*. Upper Jaw longest. Beards 4. Rays of the anal Fin 7. Back ridged. Tail forked. Length 10 or 11 inches. In most of our rivers. *Raj.* 121. *Will.* 259.
2. Carpio. *Carp*. Beards 4. Rays of the anal Fin 9. Hooks on the 3d ray of the dorsal Fin. Scales large, imbricated. Lateral line strait. Dorsal Fin blackish; the others pale red. *Raj.* 115. *Will.* 246.

3. Gobio.

3. *Gobio. Gudgeon.* Beards 2. Upper Jaw longest. Rays of the anal Fin 9. Black spots on the Back and Sides. Lateral line black, and almost strait. Dorsal rays 10. Tail a little forked. Length 5 inches. *Raj.* 123. *Will.* 264.

4. *Tinca. Tench.* Colour purplish black. Scales small and lubricous. Extremity of the Tail even. Dorsal rays 12; anal 25. Irides red. Length 10 or 11 inches. *Raj.* 113, 117. *Will.* 251.

5. *Cephalus. Club, or Cheven.* Head and Scales large. Body long and roundish. Anal rays 11. Tail even. Length 12 inches. In most of our rivers. *Raj.* 119. *Will.* 255.

6. *Phoxinus. Pink, Minime, or Minnow Pink.* Body roundish, pellucid. Lateral line yellow. Brown spots near the Tail. Rays of the anal Fin 8. Colour various. Length 2 inches. In shallow rivers. *Raj.* 125. *Will.* 258.

7. *Leuciscus. Dace.* Body roundish and slender. Scales large, imbricated. Irides white. Rays of the anal Fin 10. Length 6 or 7 inches. *Raj.* 121. *Will.* 260.

8. *Rutilus. Roach.* Iris, ventral and anal Fins red. Scales large, imbricated. Lateral line curved downwards. Rays of the anal Fin 12. Tail forked. Length 6 or 7 inches. *Raj.* 122. *Will.* 262.

9. *Orfus. Rud, or Fincle.* Colour yellowish brown. Ventral, anal Fins and Tail red.

84 FISHES. ABDOMINALES.

red. Red spots on the valve of the Gills. Irides yellow with black spots. Dorsal rays 10; anal 13. Tail forked. In the lakes in *Holderness, Lincolnsh.* *Raj.* 118. *Will.* 252. *Plot.* Ox.

10. *Erythrophthalmus.* *Red Eye.* Iris and Fins red. Body tinged with red. Rays of the anal Fin 15. Dots on the lateral line 60. *Raj.* 116.

11. *Alburnus.* *Bleak.* Under Jaw longest. Back convex. Belly sharp. Fins whitish. Scales large, imbricated. Anal rays 20. Length 5 inches. In rivers. *Raj.* 123. *Will.* 263.

12. *Brama,* *Bream.* Fins blackish. Back and Belly ridged. Scales large, imbricated, silvery. Rays of the anal Fin 27. Tail forked. Length 12 inches. Frequent in large rivers. *Raj.* 116. *Will.* 248.

CLASS

CLASS V.

INSECTS.

Antennæ 2. Legs 6 or more. Breathe through lateral Spiracula.

I. COLEOPTERA.

Wings 2, covered by 2 Shells, divided by a longitudinal suture.

SCARABÆUS. Antennæ clavated, their extremities fissile. Five joints in each Foot.

Thorax cornuted.

1. Typhoeus. *Bull-corned.* Thorax smooth with three horns or spines, those on each side extending forward equal with the extremity of the Head. Shells striated. Legs hairy. Length $\frac{1}{2}$ inch. Colour black. On Hamstead-Heath in the Spring. *Pet. gaz.* T. 23. f. 3.
2. Lunaris. *Lunated Beetle.* On the Head a lunated helmet and an erect horn. Thorax with two horns and a longitudinal line. Eight longitudinal scratches on each Shell. Colour dark brown. Length $\frac{1}{2}$ inch.

G 3

3. Nu-

3. Nuchicornis. An erect horn on the back of the Head. Thorax rounded. Head and Thorax black. Shells grey clouded with black. Length $\frac{3}{8}$ inch. Under Swines dung, frequent in the Spring.
4. Fossor. *Little oval Beetle.* Black and shining. Three transverse points on the Head. Nine longitudinal striæ on the Shells. Length $\frac{4}{7}$ inch.
5. Fimctarius. *Dung Beetle.* Thorax rounded, with a margin. Head and Thorax black. Antennæ and Shells red, in some grey. Frequent in the Spring on Cow-dung. Length $\frac{1}{2}$ of an inch.
6. Hæmorrhoidalis. Extremity of the Shells and Legs red. Size of a grain of Millet. In mushrooms and putrid vegetables.
7. Stercorarius. *Common Dor, or Clock.* Helmet raised in the middle. Corselet rounded, margined. Above black. Beneath shining blue. Thighs hairy with a brown spot on the anterior ones. Shells striated. Length $\frac{1}{2}$ inch.
8. Vernalis. Colour intirely dark shining blue. Shells not striated. Length $\frac{1}{3}$ inch. Otherwise like the former.
9. Horticola. *Black Legs, or Garden Beetle.* Beneath black and hairy. Head and Thorax blue. Shells light brown. Length $\frac{1}{2}$ inch. On Apple trees.

10. Me-

10. *Melolontha*. *Tree Beetle, Brown, or Blind Beetle*. Thorax hairy. Incisures of the abdomen white. Triangular white spot on each side the Belly. Four striae on each Shell. Tail sharp, long, curved. Leaves of the Antennæ 6 or 7. Length 1 inch. *Geef. l. 70.*
11. *Solstitialis*. *Hairy Beetle*. Thorax hairy. Shells pale brown with 3 white lines. Tail not long. Length $\frac{1}{2}$ inch. Frequent in Autumn, in the eastern part of this kingdom.
12. *Hemipterus*. *Flat Beetle*. Scaly with white dots. Head long and small. Thorax woolly, margined, with two longitudinal ridges. Shells abbreviated. Length $\frac{1}{3}$ inch.
13. *Fasciatus*. *Yellow Beetle*. Head, Body, Corselet black with yellow hair. Shells pale yellow with 3 black cross-lines. Tail not quite covered. Length $\frac{1}{4}$ inch.
14. *Auratus*. *Rose Chaffer, Brass Beetle, or Green Beetle*. Colour green with a bronze tinge. White transverse spots on the shells. Sternum projects towards the Head. Length $\frac{2}{3}$ inch. On flowers, particularly roses, and pioniæ.
15. *Nobilis*. Differs from the last in being rather less, no bronze tinge, thorax not projecting.

LUCANUS. Antennæ clavated, compressed, pectinato-fissile. Maxillæ extended so as to resemble horns. Five joints in each foot.

1. Cervus. *Stag-Beetle*. Head and Thorax black. Shells dark brown. Horns, resembling those of a Stag, forked at the end, a small branch near the middle on the inside, moveable. Shells plain. Length $1\frac{1}{2}$ inch. In several places near London.
2. Paralelipipedus. Like the last, but much less, and more compressed. Colour black. *Pet. p. 12. cap. 1. n. 3.*
3. Caraboides. *Blue Stag*. A violet tinge. Horns lunated. Thorax margined. Length $\frac{1}{2}$ inch.

DERMESTES. Antennæ of 3 joints, clavated, perfoliated. Thorax convex. Head concealed under the Thorax.

1. Lardarius. Black. Anterior part of the Shells grey. On each Shell 3 black spots in the form of a triangle. Produced from the bacon magot, Length $\frac{1}{3}$ inch.
2. Pellio. Colour dark shining brown. A white spot on each Shell. In houses and on flowers. Length $\frac{1}{3}$ inch.
3. Domesticus. Colour black brown. Thorax raised and somewhat hairy. Shells

Shells striated. Antennæ redish. On being touched it rolls itself up, and continues motionless. It is this insect, says Geoffroy, which makes the round holes in furniture, and which we call the death-watch. Length $\frac{1}{10}$ inch.

4. *Fumatus*. Colour light brown. Eyes black. Thorax margined. Size of a louse. In horse dung.
5. *Pulicaris*. *Flea Beetle*. Oblong, black. Shells abbreviated. Belly and Wings whitish. Runs and flies easily. Size of a flea. On flowers.

PTINUS. Antennæ sub-filiform, the joints towards the end longest. Thorax roundish, concealing the head.

1. *Pectinicornis*. Black-brown. Antennæ pale yellow, with teeth on the inner side. Legs colour of the Antennæ. Length $\frac{1}{3}$ inch. In old trunks of willows.
2. *Pertinax*. Dark brown, with yellowish spots; cylindrical, oblong. Antennæ plain like bristles. Thorax gibbous. On being touched he rolls himself up, and continues motionless in spite of torture. This insect, says Linnæus, destroys my chairs.
3. *Mollis*. Red brown, shining. Eyes black. Shells softish. Length $\frac{1}{10}$ inch.

4. *Fur*.

93 INSECTS. COLEOPTERA.

4. Fur. Colour brown. Head large. Antennæ longer than the body. Eyes prominent. Corselet small, globous, tubercular, but not dentated. Shells with two transverse white belts. Wings minute. Very destructive in cabinets of animal and vegetable productions. Length $\frac{1}{7}$ inch.

HISTER. Antennæ broken in the middle with a solid bulb at the end. Head retractile.

1. Unicolor. Square, black, polished. Shells abbreviated, truncated, and faintly striated. Head minute. Tail rounded. Length from 1 to 4 tenths of an inch.
2. Bimaculatus. Black, polished. Shells abbreviated, with 1 red spot on each. Size of a grain of rice. *Geof.* 95. 2. *Raj.* 108. 14.

GYRINUS. Antennæ clavated, stiff, shorter than the Head. Eyes 4.

1. Natator. *Water Flea*. Bright black. Feet yellow, flat, and large. Length $\frac{1}{3}$ inch. Runs with great celerity, in circles, on on the surface of the water. *Raj.* 87. 10.

BYRRHUS. Antennæ clavated, solid, compressed.

1. Scro-

1. *Scrophularia*. Body oval, black. Belly covered with white scales. Head small, retractile. Corselet broad and covered with red and white scales. Shells black, scaly, with a white belt and white spot on each; future red. Length $\frac{1}{16}$ inch. *Raj.* 85. 37. On flowers.
2. *Verbasci*. Much like the last, except that it is less, and has 3 pale undulated belts athwart the shells.

SILPHA. Antennæ clavated, foliated. Head prominent. Thorax margined.

1. *Vespillio*. Margin of the thorax broad. Shells abbreviated, black, with 2 yellow belts. Thighs of the hind legs large with a spine near their origin. Length near 1 inch. On dead bodies. *List. tab. mul.* 17. 15. *log.* p. 381.
2. *Biphustulata*. Antennæ long and small. Black, with 2 red spots on the middle of each Shell. Length $\frac{1}{3}$ inch.
3. *Pustulata*. Black, oblong. On the Shells 4 brown spots. Length $\frac{1}{3}$ inch. On trees.
4. *Quadripunctata*. Head, Antennæ and Legs black. Margin of the Thorax and Shells pale yellow, with 4 black spots. Length $\frac{1}{2}$ inch. In Cain-wood, near Hamstead.

5. *Sabulosa*.

5. *Sabulosa*. Black. Antennæ short, globular. Five striæ on each shell. Shells and Wings short. Five joints on the 2 first feet, 4 on the rest. In sand.
6. *Aquatica*. Brown, with a green bronze tinge. Four ribs on the thorax. On each Shell 10 striæ. Length $\frac{1}{3}$ inch.
7. *Pulicaria*. Black, oblong. Shells abbreviated. Abdomen rounded at the extremity. Thorax and Shells scarce margined. Length 1 line. Found frequently running on flowers.

CASSIDA. Antennæ knotted, enlarging towards the ends. Shells and Thorax bordered. Head concealed under the corselet.

1. *Viridis*. *Green Tortoise Beetle*. Shells, dotted and streaked, overhang the body. Beneath black. Above green. Length 1 line. On verticillated plants, and thistles.
2. *Nebulosa*. Light brown, clouded, with black spots. Shells larger than the body. Length 1, 2, 3 lines. On thistles.
3. *Nobilis*. Yellowish grey, with a green-gold line on each shell, which dies with the insect. Length $1\frac{1}{4}$ line.
4. *Maculata*.

4. *Maculata*. Green, or red. Shells with longitudinal striæ, and 5 or 6 black spots on each side the suture; also 2 large black spots near the upper external angle of the Shells. Length $3\frac{1}{2}$ lines.

COCCINELLA. Antennæ knotted, truncated. Palpi longer than the antennæ, Body hemispheric. Shells and Thorax bordered. In each foot 3 joints.

1. *2-punctata*. Head, Thorax, and Belly black. A large white spot on each side of the Corselet. Shells red, with 2 black spots. Length $2\frac{1}{2}$ lines. On the alder and some other trees.
2. *5-punctata*. Differs from the last in having 5 black spots on the Shells. In gardens.
3. *7-punctata*. *Lady Cow, or Lady Bird*. Head and Thorax black. Shells red, with 7 black spots. Length 3 or 4 lines. *Geoff.* 321. 3.
4. *9-punctata*. Black. Shells red, with 9 black spots. Length $2\frac{1}{2}$ lines. On trees. *Geof.* 323. 4.
5. *14-punctata*. Above yellow. Posterior part of the Corselet black. On the Shells 14 square spots. Length $2\frac{1}{2}$ lines. *Geoff.* 328.
6. *16-punctata*. Head, Corselet, and Shells yellow, with 16 black spots. Suture

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Suture black. Length 1 line. *Geoff.*
339. 16.

7. 22-punctata. Head black. Corselet and Shells yellow; the first with 7 black spots, the latter with 20 only. Length $1\frac{1}{4}$ line.

8. Conglobata. Head, Corselet, and Legs yellow. On the Corselet 7 black spots. Shells red with 8 black spots on each. Length 2 lines.

9. 14-guttata. Head white. Eyes black. Corselet red, with white edges. Shells red, with 14 white spots. Length 2 lines. In woods.

10. 2-pustulata. Head, Corselet, and Shells black, with a red transverse line, composed of 3 small dots, on each shell. Abdomen red. Length 1 line. On trees and flowers.

11. 6-pustulata. Head black, with 2 yellow spots. Corselet black, with yellow edges. Shells black, with 6 red spots. Length $1\frac{1}{4}$ line.

CRYSOMELA. Antennæ knotted, enlarging towards the ends. Corselet margined.

Body oval.

1. Tanacetii. Black-brown. Antennæ of 11 globules, black. Head and Corselet square. Corselet and Shells punctured; 8 longitudinal lines on

on the latter. Length 4 lines. On common Tansy.

2. Graminis. Convex, green-blue, bright, punctured. Eyes yellowish.

3. Alni. Oval, dark blue. Shells punctured. Antennæ and Legs black. On the common Alder.

4. Betulæ. Dark blue. Shells punctured in striæ. Length $1\frac{1}{2}$ line. On Birch trees.

5. Hæmoptera. Round, smooth. Wings red. Length $3\frac{1}{2}$ lines.

6. Cerealis. Streaked longitudinally with alternate blue and bronze lines, and bordered with green-yellow. Wings red. Length 3 lines.

7. Polygoni. Thorax cylindrical. Globules of the antennæ of equal size. Head, Shells, and underside of the Body blue. Corselet, Thighs, and Anus red. Legs and Antennæ black. Shells striated. On grass.

8. Polita. Beneath green-bronze. Head and Thorax gilt. Shells red, punctured. Wings red. Antennæ black. Length $3\frac{1}{2}$ lines. On Willows.

9. Populi. Head, Thorax, and beneath green-blue. Shells red, tipped with black. Antennæ black. Length $\frac{1}{2}$ inch. On poplar trees.

10. San-

10. Sanguinolenta. Head, Corselet, and under side blue. Shells punctured, black, with a red border. Wings red. Length 5 lines. In Woods.

*** Skippers. Posterior thighs thick.*

11. Oleracea. Green-blue. Corselet large and square. Antennæ half the length of the body. Length 2 lines.

12. Hyoscyami. Above fine blue. Shells striated. Legs brown. Length 1 line. On common Henbane.

13. Exsoleta. Yellow. Eyes brown. Length $1\frac{1}{2}$ line. In gardens.

14. Nitidula. Corselet ruby-colour. Shells blue, striated. Legs yellow-brown. Length 1 line.

15. Nemorum. Black, with a yellow longitudinal line on each Shell. Length $\frac{1}{2}$, 1 line. On aromatic plants. *List. tab. mut. l. 2. f. 29.*

**** Body cylindrical.*

16. 4-punctata. Black, except the Shells, which are red with 2 black spots on each. Antennæ serrated, and placed before the eyes, Length 2 lines.

17. 2-punctata. Antennæ filiform, as long as the body, long-jointed. Corselet gibbous, hemispheric. Colour black, except the Shells, which are red

red, with 4 black spots. Head partly concealed. Length $2\frac{1}{2}$ lines.

18. Sericea. Rich glossy green. Shells punctured. Antennæ and Legs blackish. Corselet gibbous. Antennæ long-jointed. Head partly concealed. Length 3 or 4 lines. *Gess.* 233. 3.

*** Body oblong. Thorax narrow.

19. Cyanella. Blue-green. Antennæ filiform. Thorax long. Shells striated. Length 2 lines. *Gess.* 243. 5.

20. 12-punctata. Red. Shells with 6 black spots on each. Antennæ black. Length $2\frac{1}{2}$ lines. On Sparagus.

21. Phellandrii. Black. Corselet bordered with yellow. On each Shell 2 yellow stripes. Length $2\frac{1}{2}$ lines. *Gess.* 266. 20. On the roots of Water Hemlock.

22. Asparagi. Head, Antennæ, and under side of the Body, black. Thorax red, with 2 black spots. Shells yellow, with a black-blue cross, and 4 spots. Length $1\frac{1}{2}$ line. On Sparagus.

CURCULIO. Antennæ clavated, elbowed in the middle, and fixed in the snout, which is prominent and horny. Joints in each foot 4.

*** Long-snouted.

1. Alliarie. Black-blue. Shells darker than the rest, and striated with minute

H

minute

minute punctures. Size of a Flea. On
Erysimum alliaria, &c.

2. *Cyaneus*. Black. Shells bluish,
 and striated with minute punctures.
 Feet brown. Target white. Size of
 a flea. On Willows.
3. *Cerasi*. Black. Shells oblong,
 striated. Double the size of a Flea.
 On Black Cherry-trees.
4. *Pruni*. Black. Antennæ brown.
 Two Tubercles on the posterior part
 of the Thorax. On Cherry-trees.
5. *Acridulus*. Bluish black. Pyri-
 form. Shells striated. Length $1\frac{1}{4}$ line.
Geoff. 291. 32. On plants of the class
Tetradynania.
6. *Purpureus*. Glossy purple. Snout
 very long. Petiver found this at Epsom.
7. *Granarius*. *Weevil*, or *Bond*. Black-brown.
 Snout long and small. Thorax punc-
 tured, and nearly as long as the abdo-
 men. Length $1\frac{1}{4}$ line.
8. *Dorsalis*. Antennæ black-brown.
 Shells red, striated; future black.
 Thighs black; Legs yellow. Size of
 a Flea. On the lesser Celendine.
9. *Pini*. Dark grey. Extremities of
 the Antennæ yellowish. Entirely co-
 vered with minute punctures. Two
 obscure brownish broad lines on the
 Thorax. Abdomen remarkably gibbous
 towards the anus. On the Scotch Fir.
10. *Lapathi*.

10. *Lapathi*. Black and white, beset with prickles. Shells narrow behind. Abdomen blackish. Legs partly reddish. On Docks; particularly the Water Dock.
11. *Scaber*. Ash-coloured. Shells brown, obscurely mottled with white, and covered with short bristles. Legs red. Double the size of a Louse. On Nettles.
12. *Quercus*. Pale yellow. Eyes black. Shells with a whitish line near the suture, and another at the base, forming a right angle. Somewhat larger than a flea. On the leaves of Oak-trees.
13. *Viscaria*. Head and Legs black. Thorax and Shells greenish ash-colour. Oval. Villous. Size of a Louse. On the *Lycchnis viscaria*.
14. *5-maculatus*. Grey. Snout very long. On each Shell 2 white spots, and a black one between each. Length 2 lines.
15. *Pericarpus*. Black-brown, somewhat globous, and clouded. Shells striated, with a heart-shaped white spot on the anterior part. Length 1 line. On Fig-wort.
16. *Betulæ*. Green-gold. Antennæ and Eyes black. The anterior verge of the Thorax is spinous in one sex,
H 2 in

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in the other not. On Birch and Alder trees. Length 2 lines.

**** Skippers; posterior thighs thick.**

17. Beccabungæ. Black. Corselet greyish brown. Shells reddish, with a brown margin. Size of a Louse. On *Vernonica beccabunga*.

18. Alni. Pale brown. Head and Belly black. Shells striated; 2 black spots on each. Length $1\frac{1}{2}$ line. On the leaves of the Alder.

19. Fagi. Black. Head and Thorax punctured. Shells striated. Thighs pale. On Beech-trees.

***** Long Snouts. Thighs dentated.**

20. Pomorum. Clouded ash-colour. On the Shells two transverse brown belts. A white spot on the posterior part of the Thorax. Antennæ and Feet brown. A strong spine on each of the fore thighs. Bigger than a Louse.

21. Nucum. Dark brown. Snout as long as the body. Abdomen ends in a point. Shells marbled; Scutellum white. Length 2 or 3 lines. In hazel nuts.

22. Scrophulariæ. Somewhat spherical. Thorax narrow, beset with yellow-white hairs. Shells black-brown, striated; a large black spot on the suture, on each side of which are two small

small white spots. Length 3 lines.
On Fig-wort.

23. Tortrix. Body oblong, yellowish.
Breast brown. Shells faintly striated.
Thighs dentated. Twisted in the
leaves of the Poplar.

**** *Short Snouts. Thighs dentated.*

24. Pyri. Black. Snout depressed.
Head and Thorax minutely punctured.
Shells oblong, with 7 excavated striæ.
Antennæ and Legs reddish. On Pear-
trees.

25. Argentatus. Covered with green-
bronze scales. Antennæ and Legs
brown. On each Shell 10 striæ.
Length 4 lines. In gardens.

* *** *Short Snouts. Thighs not dentated.*

26. Incanus. Black, beset with
whitish hair. Shells oblong, striated,
rounded. Antennæ red towards the
base; first joint very long. No wings.
Length 2—4 lines.

27. Nebulosus. Snout thick, carinated,
black, with grey longitudinal stripes.
Thorax chagrined, and covered with
white hair. Shells black, with white
hair, obliquely striated. Length 6 lines.
On trees.

ATTELABUS. Antennæ thicker towards
the apex. Head narrow behind. Four
joints in each foot.

H 3

. 1. Coryli.

1. *Coryli*. Beneath, Antennæ, Head,
Legs black. Thorax and Shells red;
the latter striated. Length 3 lines.
2. *Formicarius*. Somewhat like an
Ant. Head concealed. Antennæ black,
clavated. Thorax red, rough; ante-
rior margin black. Shells with a double
white belt, and red base. Length near
half an inch. Runs quick.
3. *Apiarius*. Black-blue. Antennæ
black, clavated. Corselet hairy. Shells
with 3 pale-red belts. Length 6
lines.

CERAMBIX. Antennæ articulated, and
tapering to the end. Shells long and
narrow. Four joints in each foot.
Thorax with lateral spines or tu-
bercles.

1. *Coriarius*. Black-brown, shining.
Antennæ of 11 triangular joints, and
proceeding from the center of the eye.
Jaws strong. Palpi 4. Thorax mar-
gined, tridentate. Shells margined.
Length In rotten wood. *Raj.* 95.
2. *Moschatus*. *Goat-chaser*. Blue-green. An-
tennæ length of the body. Shells with
2 longitudinal rugæ. Wings black.
Length 1 inch. Smells like musk.
3. *Rusticus*. Yellow-brown. Long,
slender. Antennæ somewhat shorter
than

than the body. On each Shell two narrow ridges. Belly brown. *List. loqu.* 383. 10.

4. Sanguineus. Black. Corselet and Shells red, hairy. Length half an inch.

LEPTURA. Antennæ tapering to the end. Shells narrower at the apex. Thorax somewhat cylindrical.

1. Aquatica. Gilt. Antennæ black. A tubercle on each side of the Corselet. Shells striated and truncated. Posterior thighs larger, with a spine on the interior side. On Water-plants.
2. Melanura. Black. Shells brown-yellow, tip with black. Antennæ length of the body. Thorax conic. Length 3—5 lines.
3. Virens. Black, covered with yellow-green hair, except part of the shells, which is punctured. Antennæ above black, beneath yellow. *List. T. mut.* 18. 23.
4. Arcuata. *Great Wasp Beetle.* Black-brown. Antennæ length of the body. Target yellow. Three transverse yellow lines on the Head ; 3 on the Thorax ; and 3 yellow arched lines, with as many spots of the same colour, on the Shells. Length 5—8 lines. In rotten wood. *Pet. t.* 63. 7.

5. *Arietis*. *Common Wasp Beetle*. Dark brown. Anterior and posterior margin of the Corselet yellow. Target yellow. Four yellow lines on each Shell.
6. *Præusta*. Black. Shells softish, punctured, yellow tipped with black. Fore Legs yellow. Antennæ not quite the length of the Body. Length 2 lines.

LAMPYRIS. Antennæ filiform. Shells flexile. Thorax plain, somewhat orbicular, concealing the Head. Sides of the Abdomen papillous and folded.

1. *Noctiluca*. *Glow-worm*. Male: Antennæ and Head black. Shells brown, chagrined, with 2 longitudinal raised lines. Near the extremity of the Abdomen 4 luminous spots. Length 4 lines. *Female*: No Shells nor Wings. Brown. Abdomen of 10 rings, the 3 last of which are luminous. Length 6 lines.

CANTHARIS. Antennæ taper. Thorax margined. Shells flexile. Sides of the Abdomen papillous and folded. In each Foot five joints. . . .

1. *Fusca*. Antennæ flat, black, yellowish at their base. Head, Shells, Legs, and Belly black-brown. Thighs, Jaws and Sides yellowish. Length half an inch. On flowers.

2. *Livida*.

2. *Livida*. Head orange. Eyes black. Corselet tawny red. Shells black, or pale yellow. Legs black and yellow. Beneath black. Sides partly yellow. On flowers.
3. *Ænea*. Green-gold. Shells red on the external sides. Jaws and 3 or 4 first beads of the Antennæ yellow: the 2d and 3d of these globules have each a sharp appendix. Length 3 lines. On flowers.
4. *Fasciata*. Antennæ and Legs black. Thorax greenish. Shells black, with 2 red belts. Length $1\frac{1}{2}$ lines.
5. *Biguttata*. Greenish-brown. Legs yellow. Shells black-brown, abbreviated, and tipt with orange. Length $1\frac{1}{2}$ line.
6. *Minima*. Head and Antennæ black. Corselet red, with a black spot on the center. Shells deep brown, tipt with yellow. Length 1 line.

ELATER. Antennæ taper, lodged in a groove under the Head and Thorax. Under side of the Thorax terminates in a point lodged in a cavity of the Abdomen. Laid on the back, they spring a considerable height.

1. *Bipustulatus*. Black, glossy. A red spot near the base of each Shell. Length 3 lines.

2. *Ruficollis*.

2. *Ruficollis*. Black. Thorax red.
On each Shell 8 striæ. Shells bluish.
Length 3 lines.
3. *Castaneus*. Thorax brown, some-
what hairy. Shells striated, yellow-
brown, tipped with black. Length 5 lines.
In woods, on the bark of trees.
4. *Sanguineus*. Black. Shells red,
with 10 longitudinal striæ on each.
Antennæ ferrated, especially in the
male. Length 5 lines. On the bark
of trees.
5. *Balteatus*. Black. Shells striated,
with the anterior part yellow-red.
Length 4 lines.
6. *Pectinicornis*. Brownish green,
with a copper tinge. Antennæ ferrated,
particularly in the male, which is also
greener than the female. On each
Shell 9 striæ. Length 6 lines.
7. *Niger*. Black-brown, clouded,
and covered with short grey hair. An-
tennæ short, and somewhat ferrated.
On pressing appear 2 vesicles near the
Anus. Length half an inch,

CICINDELA. Antennæ taper. Jaws
prominent, denticulated. Eyes promi-
nent. Thorax margined. In each
foot 5 joints.

1. *Campestris*. Above green-gold.
Beneath copper-tinged. Eyes large.
Thorax

Thorax angular and narrower than the head. Six white spots on each Shell. An oval substance at the base of each thigh. Legs long and slender. Length 6 lines. Runs quick. In pastures.

2. *Riparia*. Green-gold. Eyes black. Thorax narrow. Shells covered with broad excavated spots with a reddish stud in the center of each. Length 2 or 3 lines. On wet sandy ground.
3. *Aquatica*. Black-bronze. Antennæ slender. Head deeply furrowed. Corselet punctured. Shells striated. Length 3 lines. In wet sandy ground.

BUPRESTIS. Antennæ taper, the length of the thorax. Head half concealed.

1. *Chrysostigma*. Brown-gold. Eyes large. Thorax broad and short. Shells long, narrow, ending in a point, with 3 striæ and 2 gold spots on each. Length half an inch.
2. *Rustica*. Bright green-gold. Eyes red. A round hollow spot on the posterior part of the Corselet. Shells long and narrow, with 10 striæ on each. Length 7 lines.
3. *Granularis*. Antennæ clavated. Above brown-brass. Beneath black. Shells striated. Thorax with 5 furrows. Size of a Flea.

DYTISCUS.

DYTISCUS. Antennæ taper, or clavato-perfoliated. Feet villous and broad.

* *Antennæ perfoliated.*

1. Piceus. Black. Antennæ of 9 joints, brown, except the last which is black, smooth, and larger. Palpi 4, 2 of which are longer than the Antennæ. Thorax and Shells plain and glossy. Extremity of the Abdömen somewhat pointed. Length an inch and a half. A spine at the posterior part of the Sternum.

2. Caraboides. Black, glossy. Shells punctured in striæ. Abdomen rounded. Antennæ and Palpi black. Spine of the Sternum shorter than in the last. Length 7 lines.

3. Fuscipes. Black. Palpi and Feet brown. Thorax punctured. Shells striated. Length 3 lines.

** *Antennæ taper.*

4. Latissimus. Black. Exterior margin of the Shells broad, yellow. Length $1\frac{1}{2}$ inch. On water.

5. Marginalis. Black. Exterior margin of the Thorax and Shells yellow. Eyes large, round, black. A transverse tawny line on the upper lip. Palpi 4. Antennæ and Palpi tawny. Length 1 inch. On water.

6. Semi-

6. Semistriatus. Black-brown. Head, Antennæ, margin of the Thorax, exterior edges of the Shells, and beneath, yellow. On each Shell 10 striae, which extend only $\frac{2}{3}$ ds. of its length. Length near an inch and half. Is not this the female of the last? Water.

7. Cinereus. *Small smooth Water-Beetle.* Head black, the anterior part yellow; also 5 yellow spots, and a transverse yellow stripe. Shells ash-colour, with yellow margin. Beneath black, with yellow spots on the Sides. Legs black and yellow. Antennæ yellow. Length 7 lines. Water.

8. Sulcatus. Shells black, with four broad furrows, in which are grey-brown hairs. Otherwise like the last, of which it is probably the female. Length 6 lines. Water.

CARABUS. Antennæ taper. Thorax and Shells margined. A large appendix at the base of the posterior thighs. Five joints in each foot.

1. Granulatus. Thorax deep purple sprinkled with copper. Shells dark green, striated with gold; three rows of oblong beads, with intermediate striae convex lines, on each Shell. No Wings. Length 8 lines. In the fields near London.

2. Leu-

2. *Leucophthalmus*. Black. On each Shell 8 striæ. Thorax small. *List. loqu.* 390.
3. *Violaceus*. Black. Margin of the Thorax and Shells glossy violet. Length $\frac{3}{4}$ of an inch. Runs very quick. In fields.
4. *Crepitans*. Head, Antennæ, Thorax, Legs, red-brown. Eyes black. Shells and Belly black-blue. Shells striated. Length 3 lines. Under stones.
5. *Cyanocephalus*. Head and Shells blue. Thorax and base of the Antennæ red-brown. Legs black and red. Length 3 lines.
6. *Melanocephalus*. Head, Shells, and beneath, black. Antennæ, Corselet, Legs red-brown. On each Shell 8 striæ. Length 3 lines.
7. *Vulgaris*. Antennæ and Legs black. Thorax as broad as long. Above black-bronze. Beneath black. Length 3 lines.
8. *6-punctatus*. Head and Thorax glossy-green. Shells bright copper, faintly striated, and with 6 punctures on each, ranged longitudinally; exterior margin green. Length 4 lines. On the sand near brooks.
9. *Ustulatus*. Head and Thorax black; the latter rounded. Shells black-brown, with 2 yellow spots on each.
Base

Base of the Antennæ and Legs brown.
Length 1, 2, or 3 lines.

10. 4-maculatus. Head black. Corselet yellow, with a conspicuous margin. Shells obtuse, smooth, brown, with 2 pale yellow spots on each. Antennæ and Legs pale yellow. On the the sandy banks of rivers.

TENEBRIO. Antennæ globular, and larger at the end. Thorax margined. In the 2 hind feet 4 joints, in the other 5.

1. Molitor. Winged. Above black. Beneath black-brown. Antennæ length of the Thorax. Head and Corselet smooth. Shells long and strait, with 9 striæ on each. Upper part of the thighs large and round. Length 7 lines.
2. Mortifagus. *Slow-legged Beetle.* No Wings. Black, not glossy. Antennæ of 11 globules, and placed before the Eyes, which are small. Shells smooth, united, ending in a point. Articulation of the thighs with the body, a ball and socket. Fœtid. Length 1 inch. *List. loc.* 388. 21. *Charlt. Ex.* 48. *Geof.* 346. 1.
3. Coeruleus. *Bloody-egg Beetle.* No Wings. Antennæ blue tipped with black. Black-blue. Shells obtuse. Thorax orbicular. Length 1 inch. On being hurt, discharges a red liquor from the mouth. *Raj.* 388.

MELOE. Antennæ globular, the last globule oval. Thorax roundish. Shells soft. Head gibbous, and bent downwards.

1. Proscarabeus. No Wings. Antennæ thickest in the middle. Black-blue. Head broad. Thorax narrower than the head, and without margin. Shells pointed and short. On being touched, a brown liquor issues from the joints. Length 1 inch. *Geef. 377. 1.*

MORDELLA. Antennæ filiform, serrated, joints triangular. Head bent downwards. Palpi compressed, clavated, and obliquely truncated. Shells curved towards the apex.

1. Aculeata. Black. Antennæ of 11 joints, first 4 globular, the rest triangular. Shells smooth, short. Abdomen ends in a soft point. Four joints in the 2 hind feet, 5 in the rest. Length 3 lines. On flowers.

STAPHYLINUS. Antennæ globular. In each foot 5 joints. Shells curtailed. Wings covered. Tail defenceless, with 2 vesicles.

1. Murinus. Antennæ of 9 globules. Head depressed. Downy, grey clouded with black. Length 6 lines. On horse-dung.

2. Maxillofus.

2. *Maxillofus*. Black, downy. Antennæ of 11 globules. Jaws as long as the head. Shells greyish, cover one third of the Abdomen. Length 1 inch. In woods.
3. *Rufus*. Orange colour. Antennæ somewhat larger at the ends. Head black with long Jaws. Posterior part of the Shells, and Anus black. On the middle of the Shells 2 longitudinal punctured lines. Length 3 lines.
4. *Riparius*. Red-brown. Head, Antennæ, and 2 last rings of the Abdomen black. Shells blue. Length 3 lines. On wet sand.
5. *Chrysomelinus*. Short, oval. Head and Abdomen black. Corselet and Shells straw colour. Antennæ brown, enlarging towards the end. Abdomen short, thick, villous. Length 1 line. On sand, and near walls.

FORFICULA. Antennæ tapering. Shells curtailed. Wings covered. Tail forked. In each foot 3 joints.

1. *Auricularia*. *Earwig*. Antennæ of 14 joints. Brown. Shells tipped with white. Length 7 lines.
2. *Minor*. *Less Earwig*. Pale chesnut. Antennæ of 11 joints. Length 3 lines.

II. HEMIPTERA.

Shells, or upper wings, semi-crustaceous, not divided by a straight suture, but incumbent on each other. Beak curved downward.

BLATTA. Antennæ taper. Thorax orbicular, margined.

1. Orientalis. Brown. Head small and almost entirely concealed. Corselet large and oval. Shells transparent, membranous, and short. Three striæ, the middle one serpentine, on each Shell. Two vesicular points, one on each side the last ring of the Abdomen. The Female has neither Shells nor Wings, but the rudiments of each. Length near an inch. In bake-houses, and near chimnies.

GRYLLUS. Head maxillous, and with Palpi. Antennæ filiform, or taper. Wings folded. Hind legs strong for leaping.

1. Bipunctatus. Dark brown. No Shells. Corselet, gradually diminishing, extends to the extremity of the Abdomen. Antennæ filiform, short. In each foot 3 joints. Length 4 lines.
2. Subulatus. Dark brown. Antennæ filiform, short, of 13 joints.
No

- No Shells. Corselet longer than the body. Length half an inch.
3. *Gryllotalpa. Mole Cricket.* Dark brown. Antennæ filiform, long, small. Head long and small. Four short thick Palpi. Corselet cylindrical. Shells short. Whole Body villous. Two small Tails. In each foot 3 joints. Fore feet large, palmated. Length 18 lines. Lives chiefly under ground.
4. *Domesticus. House Cricket.* Antennæ long, filiform. Head large, round. Thorax short, broad. Shells, in the Male, longer than the Abdomen; in the Female much shorter. In the Female, a long hard point, thick at the end, at the extremity of the Abdomen; in both 2 appendices. Hind feet much larger than the rest. Length 1 inch.
5. *Campestris. Field Cricket.* Antennæ black, almost as long as the body, the last joint very large. Thorax very short. Shells oval, ash-colour. Two Tails. Feet black. Jaws strong. Lodges under ground.
6. *Verrucivorus. Great green Grasshopper.* Antennæ longer than the body, and taper. Shells clouded, and Wings reticulated; both exceed the length of the abdomen considerably. Beyond the Abdomen of the female extends a kind of sword with a double blade. Length 1 inch.

7. *Grossus*. *Common Grasshopper*. The larger sort greenish, the lesser red. Antennæ cylindrical, of 24 joints. A ridge in the form of an X on the Corselet. Length 5—10 lines.

CICADA. Antennæ taper. Shells membranous. In each foot 3 joints. Hind legs strong for leaping.

1. *Cornuta*. Black-brown. Antennæ short. Thorax bicornuted, the posterior horn extends almost to the extremity of the Abdomen. Wings diaphanous, crossed. Brown veins on the Shells. Length 4 lines. On trees, ferns, &c.
2. *Spumaria*. *Black-headed Frog-hopper*, or *Cuckow-spit Insect*, or *Froth-worm*. Brown. Beneath lighter. Shells with 2 imperfect white belts, or long transverse spots. In the midst of white froth on diverse plants.
3. *Leucocephala*. Head and forepart of the Corselet yellow white. Shells brown, with a yellow border. Beneath yellowish. Length $2\frac{1}{2}$ lines.
4. *Lateralis*. Black. Shells with a white border. Beneath white; middle of the Belly black. Length 3 lines.
5. *Striata*. Head pale-green, with 6 black spots. On the Target 2 black spots, with a pale circle round each. On

On the Shells black and white oblique striæ. Beneath brown. Length $1\frac{1}{2}$ line.

6. Interrupta. *Striped Froghopper*. Head black with a few yellow spots. Corselet black, with a yellow spot on the posterior part. Target yellow in the center. Shells yellow with black lines. Beneath yellow. Length 2 lines.
7. Viridis. Head yellow, with 2 black spots. On the Target 2 black dots. Wings and upper part of the Abdomen lead colour. Legs yellowish. Length 3 lines. On water plants.
8. Ulmi. Yellow-green. Ends of the Shells brown-gold. Length $1\frac{1}{2}$ line. On Elms.
9. Rosæ. Green-yellow. Wings white. Length 1 line. On rose-trees.

NOTONECTA. Antennæ beneath the Eyes. Wings crossed and complicated. Feet formed for swimming. Hind feet hairy.

1. Glauca. *Common Boat-fly*. Head yellow; Eyes brown, large. Thorax, anterior part yellow, posterior black. Shells clouded black and brown. Beneath brown. Feet of 2 joints. Length 6 lines. Swims on its back, On smooth water.

2. *Striata*. *Brown Boat-fly*. Depressed. Head and Legs yellow. Eyes dark brown. Thorax and Shells brown with many transverse undulated parallel yellowish lines. Feet of 1 joint. Length half an inch. Fore feet like crab's claws. Smells disagreeably. On water.
3. *Minutissima*. *Little Boat fly*. Grey, with longitudinal brown spots. Length 1 line. Swims on its back.

NEPA. Antennæ, or Fore legs cheliform. Wings crossed and complicated; fore part coriaceous.

1. *Cinerea*. *Water Scorpion*. Black-brown. Head small. Antennæ cheliform. Thorax almost square. Tarsus large, brown. Shells large. One joint in each foot. Length near an inch. In the Female the Abdomen terminates in two long appendices. Four legs only. On water.
2. *Cimicoides*. Olive. Antennæ very short. Head broad, flat. Two fore legs cheliform. Sides of the Abdomen serrated. In each foot 2 joints. Length 4 or 5 lines. On water.
3. *Linearis*. Green-brown. Antennæ cheliform. Legs 4. In each foot one joint. Head small. Thorax long, cylindrical. Abdomen red beneath. Two long Tails. Length, exclusive of the Tails, 13 lines. On stagnant water.

CIMEX.

CIMEX. Antennæ longer than the Thorax. Thorax margined. In each foot 3 joints.

1. Lectularius. *House Bug*. No Shells or Wings. Reddish brown. Head and Shoulders red.
2. Scaraboides. Antennæ somewhat clavated. Target covers the whole Abdomen. Above black-bronze. Wings white. Legs spinous. Beneath black. Size of the last. On flowers in meadows.
3. Clavicornis. Antennæ of 4 joints, clavated. Head and Belly black. Legs brown. Corselet black, with a white margin. Shells diaphanous, white, with black punctures on the edges. Length $1\frac{1}{2}$ line.
4. Corticalis. Blackish. Extremely flat and thin. Head triangular. Antennæ of 3 joints. Shells and Wings grey. Abdomen long, slender, and imbricated at the sides. Size of the house bug. On trees.
5. Betulæ. Brown-grey. Much depressed. Thorax furrowed, rough, black in the center, sides grey, denticulate. Shells grey, clouded. Wings brown. Legs black; Feet red. On birch-trees.
6. Filicis. Oval, depressed. Head and Legs livid. Eyes, Abdomen, and Thorax

Thorax black. Shells brown, with a yellowish margin. On Fern.

7. *Marginatus*. Red-brown. Antennæ of 4 joints, red in the middle, with spines near their base. Thorax obtusely angulated. Abdomen broader than the Shells. Length 6 lines.
8. *Baccarum*. Oval. Olive-brown. Beneath brown-yellow. Antennæ and sides of the Abdomen alternate black and yellow. Thorax short and very broad. A large orange spot at the posterior angle of the Target. Length half an inch. Extremely foetid. Antennæ of 5 joints. On Gooseberry bushes. I caught one of these on the bag of a gentleman's wig in Fleet-street.
9. *Juniperinus*. Roundish. Green, with yellow margins. Antennæ of 5 joints. Snout bends quite under the Belly. Corselet large, with obtuse angles at the sides. Target large. All the upper part punctured, with black dots. Length half an inch.
10. *Cæruleus*. Oval. Blue-green-bronze. Antennæ of 5 joints, and Legs black. Corselet and Shells punctured. Wings brown. Length 3 lines.
11. *Oleraceus*. Above black-blue-bronze, with red or white lines and spots: viz. on the Corselet a longitudinal line; on the point of the Target a spot;

a spot; a spot on the anterior part of each Shell; and a line on the exterior verge of both Corselet and Shells. Joints of the Antennæ 5. Length 3 lines.

12. Bicolor. Above black-blue. Beneath black. Exterior verge of the Corselet white. Two white spots on each Shell. Membraneous part of the Shells brown. Joints of the Antennæ 5. Length 3 lines.

13. Acuminatus. Oval. Yellow-white. Antennæ of 5 joints, red-brown. Snout sharp. Thorax narrow before; rest of the body oval. Two brown longitudinal lines from the crown to the center of the Target. Length 3 lines.

14. Personatus. Black. Head small; Snout long, sharp. Eyes very large. Antennæ of 4 joints, sharp pointed. Corselet triangular, with 2 large tubercles on the fore part. Shells entirely membraneous. Legs long. Flies well. Length 7 or 8 lines. In houses.

15. Hyoscyami. *Scarlet Bug*. Antennæ of 4 joints. Head, Corselet, posterior point of the Target, Shells, and under side of the Body red. Antennæ, Eyes, and Legs black. Two black spots on the Head; 2 on the Corselet, and a black cross on the Shells. Length 4 lines.

16. Equestris.

16. *Equestris*. Head, Corselet, Shells, and Belly red. Eyes, Antennæ, Legs, fore part of the Corselet, and a transverse belt on the Shells, black. A white spot on the membranous part of the Shells. Antennæ of 4 joints. Length half an inch.

17. *Apterus*. Antennæ of 4 joints. Head, Antennæ, Legs, and Target black. Corselet black, with a broad red margin. Shells red, with a round black spot in the middle. Beneath black, with a red margin. Length 4 lines.

18. *Pratenfis*. Oblong. Above grey-green-yellow. On the Target a yellow heart-shaped spot, and three spots on the Shells. Beneath, Antennæ, and Legs yellowish. Antennæ of 4 joints. Length $3\frac{1}{2}$ lines.

19. *Umbratilis*. Green yellow. A greenish heart-shaped spot on the Target. A brown spot on the Shells. Antennæ brown of 4 joints. Length $1\frac{1}{2}$ line. On flowers.

20. *Striatus*. *Fine streaked Bugkin*. Antennæ black, of 4 joints. Eyes and Legs brown. Corselet black, with 5 longitudinal yellow lines. Target black. Black and yellow longitudinal lines on the Shells, with a yellow triangle at the ends. Beneath black. Length 3 lines. In the woods near Hamstead:

21. *Populi*.

21. Populi. Brown and white clouded. Antennæ as long as the body, taper. Shells depressed. Legs long, black and white. In woods, particularly on the trunk of the Poplar.
22. Ulmi. Antennæ not quite so long as the body, taper. Head and Thorax red-brown. Shells pale, with longitudinal crimson veins. Wings brown, with white spots.
23. Abietis. Antennæ filiform, black, of 4 joints. Head sharp, black. Thorax black, behind red-brown. Target black. Shells pale, sides yellow, black spot in the middle. Legs red. Fore thighs very thick and dentated. Abdomen brown. On the Scotch Fir.
24. Lacustris. Above black. Beneath black and white changeable. Antennæ black, of 4 joints, half as long as the body. Eyes large, prominent. Fore legs much shorter than the rest. Length 4 lines. Runs quick on the surface of still water.
25. Stagnorum. Black-brown. Long, slender. Head one-third of its whole length. Antennæ as long as the head, and very small. Eyes minute, prominent. Fore legs short. Length $\frac{1}{2}$ inch. Breadth $\frac{1}{3}$ line. On stagnant water.
26. Vagabundus. Brown and white. Head large; Snout curved. Thorax long, cylindrical. Shells very long. Fore

Fore legs short, thick. Four hind legs very long and slender. Length 2 lines. Breadth $\frac{2}{3}$ line.

APHIS. Beak inflexed. Antennæ longer than the Thorax. Wings 4, erect, or none. Feet of one joint. Extremity of the Abdomen generally forked.

1. Ribis. *Currant Louse*. Green-brown. Antennæ black, longer than the body. Wings erect, with black veins. Podex prominent, with 2 bristles. Size of a common louse. On red currant bushes.
2. Ulmi. *Elm Louse*. Oblong, brown, covered with thin white down. Antennæ thick. Wings transparent, with a brown spot on the exterior margin. Size of a grain of millet.
3. Sambuci. *Elder Louse*. Bluish black. Minute.
4. Rumicis. *Dock Louse*. Black-bronze. Antennæ white, tipped with black. Legs grey, with bluish joints. Base of the Wings green. On the sharp-pointed Dock.
5. Acetosæ. *Sorrel Louse*. Black, with a green belt.
6. Lychnidis. *Campion Louse*. Black. Antennæ and Legs pale. Abdomen obtuse.
7. Rosæ. *Rose Louse*. Green or red. Antennæ black, the length of the abdomen.
8. Tiliæ.

8. *Tiliae. Lime Louse.* Oblong. Greenish. Antennæ and Legs black and white. Wings bordered and spotted with black.
9. *Brassicæ. Cabbage Louse.* Green, mealy.
10. *Craccæ.* Oval, margined, bluish-black, mealy.
11. *Sonchi.* Black, or sometimes bronze. Between the tails a third appendix, curved upwards. On the Sow-Thistle.
12. *Cardui.* Brazen-black, polished. Legs and Antennæ black, with the base whitish. Abdominal appendix black. On Thistles.
13. *Tanaceti.* Red-brown. Rudiments of the Wings, Antennæ, and Legs paler. On Tansy.
14. *Absointhii.* Black. Back greyish, with a large brown spot. Middle appendix erect.
15. *Jaccæ.* Black. Wings white. Extremity of the Abdomen brown. On common Knapweed.
16. *Betulæ.* Greenish. No Wings. Sides spotted with black. On Birch-trees.
17. *Fagi.* Green, covered with white down. On Beach-trees.

18. *Quercus.*

18. *Quercus*. Brown. Trunk three times as long as the Body. Under the bark of trees.
19. *Salicis*. Black, with white spots. Tails brown. On Willows.
20. *Populi*. Oval, livid. On each side 5 white spots. No Tails. Rudiments of the Wings acute. On Poplars.
21. *Accris*. Green. Middle of the Head and of the Corselet black. A brown spot near the Tail. On the leaves of the Maple.
22. *Atriplicis*. Green. Eyes black. Rolled up in the leaves of grass-leaved Orache.

CHERMES. Trunk or Snout proceeding from the Breast, between the first and second pair of Legs. Antennæ longer than the Thorax. Wings 4, deflexed. Thorax gibbous. Skip.

1. *Graminis*. Antennæ whitish, tipped with black. Legs white. Head and Thorax grey, with white lines. Does not skip.
2. *Pyri*. Grey. Abdomen short, with transverse white lines. On Pear-trees.
3. *Sorbi*. Above streaked with black. Beneath greenish. Corselet yellowish, with two dots on the anterior part, and on the posterior 4 black lines. On the mountain ash.
4. *Urticæ*.

4. *Urticæ*. Brown. Sides and Legs white. Antennæ black, base white. Eyes yellowish. On Nettles.
5. *Alni*. White. Eyes lateral, prominent. Tail forked. Antennæ variegated. Mouth black, between the 1st and 2d pair of Legs. On the common alder.
6. *Quercus*. White-yellow. Shells with 4 brown spots on the exterior, and one on the interior Margin. On the leaves of the Oak.
7. *Abietis*. White-yellow. Antennæ taper. Eyes brown, with a black speck between them. Wings bluish. Length 2 lines. In large tubercles on the ends of the branches of the common Fir.
8. *Fraxini*. Brown. Antennæ small and taper. On the Corselet a transverse belt, and a longitudinal yellow line. Wings longer by half than the Abdomen, which is blackish. Length $1\frac{1}{2}$ line. On Ash-trees.

COCCUS. Trunk proceeding from the breast. Wings, in the Male, 2, erect; Female none. Four or 6 white bristles at the extremity of the Abdomen.

1. *Hesperidum*. *Green-house Bug*. Oval, brown, oblong, covered with a kind of varnish. Legs 6. A notch and 4 bristles at the Tail.

Tail. When young it runs upon the trees, but afterwards fixes on some leaf where it hatches an infinity of eggs, and dies. The male is a very small fly. On Orange-trees, &c.

2. Betulæ. Green-brown. On Birch-trees; on the divarications of the branches.
3. Phalaridis. Red-white, mealy. On Canary-grass.

THRIPS. Beak obscure. Antennæ as long as the Thorax. Body narrow. Wings 4, straight, narrow.

1. Physapus. Black. Shells bluish. Antennæ of 6 joints. Wings very narrow. Runs quick, and skips. Less than a Flea. Frequent on Dandelion. &c.
2. Juneperina. Antennæ of 7 joints, yellowish. Corselet and Abdomen black. Shells and Wings grey. Legs black. Feet, of two joints, yellowish. Runs swift. On the bark of old trees. Length 1 line.
3. Fasciata. Black. Shells with 3 white belts. Less than a Flea. On flowers.

III. LEPIDOPTERA.

Wings 4, imbricated with very minute scales. Tongue, or Trunk, spiral. Body hairy.

PAPILEO.

PAPILEO. Antennæ clavated. Wings, when at rest, erect. Diurnal.

1. Machaon. *Royal William, or Swallow-tail Butterfly.* Black and yellow. Body black above, yellow on the Sides and Belly. Eyes, Antennæ, and Trunk black. First Wings rounded, in the middle yellow, with black lines; near the posterior verge 8 yellow semilunar spots. Second Wings black and yellow, with 2 long Tails, and 2 orange spots, surrounded with blue, at the posterior angle. Caterpillar large, smooth pale-green, with black transverse stripes spotted with orange. On umbelliferous plants. Breeds in May and July.
2. Podaliripus. In shape and colour much like the last, but the yellow is paler, and the Tails longer and narrower. On the 1st Wing, 6 black ribs, and a black margin. On the 2d, an oblique black rib, and a black border with 4 or 5 blue semilunar spots, and near it 6 yellow spots. Rare, in woods.
3. Cratægi. *White Butterfly, with black veins.* Wings rounded. Breadth near $2\frac{1}{2}$ inches. In meadows in June. Caterpillar black, covered with white and yellow hair: feeds on the white thorn.
4. Brassicæ. *Great White Cabbage-Butterfly.* First Wings white, with 2 black spots in
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the middle, and black at the extremities. Second Wings white, with a black spot on the superior margin. The female has no black spots on the upper surface. Caterpillar yellow, black, and blue. Breeds in May and July.

5. Rapæ. *Small White Cabbage-Butterfly*. Like the last, but less. Caterpillar green, with a pale yellow line on each side.
6. Napi. *White Butterfly, with green veins*. White above. First Wings tipped slightly with black, and the under surface of the 2d Wings spread with broad green veins. Female has 2 or 3 black spots on the upper surface of the Wings. Caterpillar, feeds on cabbage, &c.
7. Cardamines. *Orange Tip*. Wings rounded, a little scalloped. First Wings, the superior part, orange, tipped with brown; a semilunar black spot near the center, the rest white. Second Wings, beneath, marbled with green. Middle size. Female wants the orange-colour. Caterpillar green, feeds on grass.
8. Hyale. *Saffron Butterfly*. Wings entire, rounded, yellow. On the 1st Wings a black, and on the second an orange spot, bordered with black. Antennæ and Legs yellow. Breadth 2 inches. In autumn, but rare.
9. Rhamni. *Brimstone Butterfly*. Wings angulated, entire, pale greenish yellow, with a small brown spot near the center of each.

each. Antennæ brown. Caterpillar green, feeds on the Buckthorn. Breeds in July or August.

10. *Hyperantus*. *Brown-Eyed Butterfly*. Wings entire, brown. Beneath, on the 1st Wings 3 eyes, on the 2d 5. Common near woods. July and August.

11. *Jo*. *Peacock Butterfly*. Wings angulated, indented, yellowish red, with a large blue eye on each. Caterpillar black, dotted with white; on nettles. Common all summer.

12. *Maera*. *Great Argus*. Brown and orange variegated. Second Wings slightly scalloped. Above, 1st Wings, a black Eye, white in the center; 2d wings 3 eyes. Beneath, 2d Wings, 7 eyes on each. Rests frequently on walls and stones. Caterpillar smooth, feeds on grass.

13. *Ægeria*. *Wood Argus-Butterfly*. Wings rounded, and a little indented. Above brown, with orange irregular spots. On the 1st Wings, near the upper angle, a black eye with a white pupil, and 3 on the 2d. Caterpillar smooth, green. July and August. On grass.

14. *Galathea*. *Marble Butterfly*. Wings rounded, indented. White, with black lines and irregular spots. Beneath, on the 1st Wings, one small Eye, on the 2d 5. Caterpillar smooth, yellow.

15. *Semele. Black-eyed Marble Butterfly.* Wings indented, black-brown, with a light yellow broad transverse stripe, on which are 2 eyes on the 1st wings, and 1 on the 2d, which are waved with white. In woods.
16. *Jurtina. Meadow Brown Butterfly.* Wings above brown, yellow in the middle, with one Eye in the 1st. Beneath, 2d Wings grey in the middle, indented. Common in meadows.
17. *Cardui. Painted Lady.* Wings indented. Above, 1st Wings, towards the extreme angle, black, with white spots; the rest orange, spotted with black: 2d Wings orange, with a range of black spots near the Margin. Beneath, 1st Wings variegated with black, white, orange, yellow: 2d marbled with grey, yellow, brown, and 5 Eyes near the Margin. Caterpillar grey, spinous: feeds on nettles.
18. *Iris. Emperor of the Woods, or Purple High-flyer.* Wings indented. Above purple, darker round the edges, with 7 distinct white spots on the 1st Wings; on the 2d an irregular broad white stripe, and a yellow eye. Beneath black, brown, and white. Large.
19. *Antiopa. Willow Butterfly.* Wings angulated, black, with a yellow-white external border. In the anterior margin of the 1st Wings, 2 long yellowish spots

spots. Between the black and yellow a range of bluish eyes. Body and Antennæ black. Caterpillar black, spinous, with large brown spots. Very rare in this kingdom.

20. *Polychloros. Great Tortoise-shell Butterfly.*

Deep orange, with black spots. Wings considerably indented. Above, on the 1st Wings 7 spots, on the 2d 1, and a broad exterior black border edged with black and yellow. The 2 black spots which touch the anterior edge of the 1st wings, are long and much larger than the rest. Beneath black-brown and dull yellow. Caterpillar brown and yellow, spinous; feeds on Elms, Pear-trees, &c.

21. *Urticæ. Small Tortoise-shell Butterfly.* Much like the last, but less. On the 1st Wings 6 black spots, 2 of which are very small, and one whitish spot. Caterpillar feeds on nettles. Flies early in the spring.

22. *C. album. Comma Butterfly.* Orange, spotted with black. Wings much indented. Beneath, on the 2d Wings, a white spot in the shape of a comma, C, or G. Legs white in the middle. Caterpillar spinous, brown on the Sides, and white on the posterior half of the Back. On hops and nettles.

23. *Atalanta. Admiral Butterfly.* Wings black, indented; a broad transverse fire-red stripe

stripe, and 7 or 8 white spots on the 1st pair; a red posterior margin, and 4 black dots on the 2d. Caterpillar grey, spinous; on nettles.

24. *Lucina. Small Fritillary.* Wings indented. Above red-brown, with minute yellow, black and white spots. Beneath, on the 2d wings, a double band of white spots, and some black ones near the posterior margin. Frequent near Cambridge. Sometimes in Hornsey-Wood.

25. *Matura. Heath Fritillary.* Above orange, longitudinally streaked, and transversely waved with black; bordered with small semilunar white spots. Wings entire. Yellow spots on the under surface of the 2d Wings. Caterpillar black, spinous.

26. *Cinxia. Plantain Fritillary.* Above like the last, but the transverse waves are more distinct, and on the 2d Wings are 8 black dots. Beneath, the 1st Wings have a yellow exterior border, and the 2d 3 broad yellow stripes. Caterpillar black-blue, spinous. In meadows.

27. *Paphia. Great Fritillary.* Large. Above, pale orange, with fine black veins, and several rows of large, round, black spots. Beneath, the 2d Wings are greenish, with 4 silvery transverse waves, in the exterior of which are 4 circular spots. Caterpillar, above brown, beneath yellow, spinous, with 2 long horns. On nettles.

28. *Aglaja.*

28. *Aglaja*. *Great Fritillary Butterfly with silver spots*. Large. Wings a little indented. Above pale orange, with many round black spots. Beneath, on the 2d Wings, 21 or 22 silver spots, 7 of which are semilunar, and regularly ranged near the margin. Caterpillar spinous, black with a line of yellow spots on each side. In woods.
29. *Lathonia*. *Less Silver-spotted Fritillary*. Silver spots 30. Caterpillar brown, with a yellow line on each side.
30. *Euphrosyne*. *April Fritillary*. Above yellow, with black veins and transverse waves. Beneath 9 silver spots on the 2d Wings. *Geof.* 44. 11.
31. *Betulæ*. *Brown Hair-streak Butterfly*. Less than the middle size. Dark brown, with a large oblong orange spot on the 1st Wings. Beneath yellow and orange. Two short appendices to the 2d Wings. Caterpillar flat, and broadest in the middle. On the black thorn.
32. *Quercus*. *Purple Hair-streak Butterfly*. Above deep purple, with a white exterior margin. Beneath grey, streaked longitudinally, and waved transversely, with 2 yellow eyes, and a short appendix to each of the 2d Wings. Caterpillar broad in the middle, and sharp at each end. On oaks.
33. *Argus*. *Blue Argus*. Above fine blue, with a white fringe on the exterior margin. Beneath

Beneath grey, sprinkled with small black eyes. Small size. Caterpillar broad in the middle. Some of this species of Butterflies have yellow-black eyes on the upper surface of the wings.

34. Argiolus. Above blue, with a black exterior margin. Beneath bluish grey, sprinkled with black spots. Small.
35. Rubi. *Green Butterfly*. Wings indented. Above brown. Beneath green. Small. Caterpillar green, with a red head; broad in the middle. On brambles.
36. Pamphilus. *Small Heath Butterfly*. Above orange, with a brown exterior margin. Beneath, one Eye in the angle of the 1st Wings, and on the 2d a transverse white wave. Caterpillar small, with a red head. *Geoff. 53. 21.*
37. Phlæas. *Small Golden Black-spotted Butterfly*. Wings orange-bronze, spotted with black. Short appendices to the 2d Wings. Small size. *Geoff. 65. 35.*
38. Comma. *Chequered Heg*. Deep yellow, with black veins and margin, and a black transverse long spot on the 1st Wings. Small size. When at rest, the 1st wings stand perpendicular, and the 2d horizontal. In meadows in autumn.
39. Malva. *Grizzle, or Brown March Fritillary*. Brown, speckled with white, and fringed with brown and white. In meadows in the spring. Caterpillar grey, head black,

black, and a few yellow spots round its neck. On mallows and thistles.

SPHINX. Antennæ thickest in the middle. Wings, when at rest, deflexed. Fly slow, morning and evening only.

1. Ocellata. *Eyed Willow-Hawk Moth*. No trunk. Wings indented. Above, 1st Wings dark and light brown, marbled; 2d red, with a large yellow-black eye. Beneath, a large red triangle from the base of the 1st wings. Breadth $1\frac{1}{2}$ inch. Caterpillar smooth, green, with oblique white lines on the sides, and a posterior horn. Eggs green. On willows.
2. Populi. *Poplar-Hawk Moth*. Wings scalloped, bluish grey, waved with dark lines. On the 1st Wings a long white spot, and the base of the 2d red-brown. Wings reversed. Length 1 inch. A long spiral trunk. Caterpillar green, smooth, with oblique white spots, and a posterior horn. On poplars and willows.
3. Tiliæ. *Lime-Hawk Moth*. No trunk. Wings scalloped. Antennæ white on the upper side, yellow on the under. Above, 1st Wings grey-brown, with 2 irregular large green spots; 2d Wings orange. Beneath greenish grey. Caterpillar green, chagrined, with a posterior horn.
4. Convolvuli. *Unicorn, or Bindweed-Hawk Moth*. Antennæ long, thick. Trunk very long,

long, spiral. Above, body marked with black and red belts.; Wings entire, brown-grey, with black zig zag transverse lines. Breadth 3 inches. Caterpillar smooth, green, with a posterior horn.

5. *Ligustri. Privet-Hawk Moth.* Antennæ long, thick, brown. Trunk long, spiral. First Wings 2 inches long, narrow, entire, brown; 2d short, red, with black bars. Abdomen red with black rings. Caterpillar smooth, yellow-green, with a posterior horn.

6. *Atropos. Jessamine-Hawk Moth.* Wings entire. Trunk long, spiral. Above, 1st Wings brown, clouded with grey and yellow, and a yellowish spot in the center; 2d yellow, with 2 waved transverse stripes. Abdomen yellow, with 7 black-brown belts. Thorax marked like a Death's-head. Length 2 inches. Caterpillar very large, yellow, with 6 green and orange oblique belts, and a posterior horn.

7. *Elpenor. Elephant Moth.* Wings angular, entire. Above, 1st Wings striped transversely with red and green; 2d black at the base, and red outwards. Body red and green. Caterpillar smooth, brown and yellow, with a posterior horn, and a snout like a Hog. On vines, convolvulus, &c.

8. *Stellatarum. Large Bee Moth.* Antennæ thick towards the ends, brown. Trunk spiral.

spiral. Wings short, entire. Body thick, brown, hairy. First Wings brown, waved; 2d red-brown. Resembles a large Bee. Caterpillar smooth, with a posterior blue horn, tip with red. On gallium.

9. *Tipuliformis*. *Small Bee Moth*. Thorax yellow beneath. Wings short, with black veins. Abdomen black, bearded, yellow at the extremity. Caterpillar, on the *Lonicera*.

10. *Filipendulæ*. *Burnet Moth*. Antennæ, Legs, and Body black. Second Wings red, with a greenish border. First Wings bluish green, with 6 red spots, in pairs. Length 8 lines. Caterpillar yellow, with black spots. On grass.

PHALÆNA. Antennæ taper from the base. Wings, in general, contracted when at rest. Fly by night.

1. *Pavonia*. *Emperor Moth*. Antennæ feathered. No trunk. Wings expanded, horizontal, rounded, entire, with a large eye in the center of each; the 1st red-brown, waved; the 2d orange. The Antennæ of the male are broader, and the wings of the female larger, waved with black and white, and bordered with yellow. Caterpillar green or yellow, spinous. On thorns and brambles. Length of the Moth 1 inch.

* *No Trunk. Wings reversed, i. e. 1st Wings horizontal, and 2d erect.*

2. *Quercifolia. Lappet Moth.* Red-brown, with transverse waved lines. Wings rounded and regularly scalloped. No Trunk, but a sharp Nose. Length $1\frac{1}{4}$ inch. Caterpillar mouse colour, spinous, with a trunked posterior horn. Eggs blue, with brown hoops. On brambles and black thorn.

3. *Rubi. Fox-coloured Moth.* Antennæ fringed. Wings entire, with a whitish margin: 2 whitish transverse waves on the 1st pair. Caterpillar brown, with black rings. On brambles, &c.

4. *Potatoria. Drinker Moth.* Yellow-brown. Wings slightly scalloped: on the 1st pair, a dark oblique line from the extreme angle, and 2 white spots near the anterior edge. Nose sharp. Length 1 inch. Caterpillar hairy, black and brown, with white spots on the sides. On grass.

5. *Pini. Pine Lappet Moth.* Wings slightly scalloped: 1st pair waved with alternate broad transverse grey and brown stripes; a white triangular spot near the anterior edge. Length $1\frac{1}{2}$ inch. Caterpillar large, brown, grey, white. On pines.

6. *Quercus. Great Egger Moth.* Antennæ feathered. Yellow-brown. Half the Wings, next the Body, darker; near the center of the 1st a white spot. First Wings also

also darker at the extremities, and the 2d have a whitish margin. Length 1 inch. The female larger, and lighter coloured. Caterpillar whitish, with black rings. On oaks, &c.

7. *Lanestris*. *Small Egger Moth*. Dark brown. Wings rounded: on the 1st a white transverse wave, and two white spots; on the 2d a wave only. Tail broad and woolly. Length $\frac{2}{3}$ inch. Caterpillar hairy, black, with white rings and dots, and large orange spots. On the black and white thorn.

8. *Vinula*. *Puff Moth*. Antennæ feathered. Wings grey, streaked, dotted, and waved with black. Thorax dotted with black. Wings somewhat diaphanous. Length 1 inch. Caterpillar green, high shouldered. Face and Back red. Two Tails. On oaks, willows, and poplars.

9. *Bucephala*. *Buff-tip Moth*. Antennæ feathered. First Wings grey, with 2 double transverse brown waves, and a large yellowish round spot at the extreme angle. Second Wings plain, light yellow. Length scarce 1 inch. Caterpillar hairy, yellow, with black spots. On oaks, ash, &c.

10. *Verficolora*. *Glory of Kent*. Antennæ feathered, blackish. First Wings red-brown, with 2 transverse waved black and white lines, and 3 white spots at the extrem' angle. Second Wings orange, with 2 white spots at the exterior

terior angle. Very rare. Length $\frac{3}{4}$ inch.

11. Populi. *December Moth*. First Wings dark brown, with 2 transverse waved white lines, a white spot at the base, and speckled margin. Second Wings light brown, with a transverse white wave. Length more than half an inch. Caterpillar yellow, hairy. On oaks, hazel, &c.

12. Neustria. *Lackey Moth*. Antennæ feathered. Light yellow, with a broad transverse darker wave athwart the middle of both wings, bounded by a brown line above and below. The exterior margin of both Wings speckled. Length $\frac{1}{2}$ inch. Caterpillar long, slender, striped with blue, red, and white. On thorns.

** *No Trunk. Wings depressed, deflexed. Back smooth.*

13. Caja. *Great Tyger Moth*. Antennæ feathered. First Wings white, with large irregular dark brown spots. Abdomen and 2d Wings orange, with black spots. Caterpillar, foxy, hairy, with white spots on the sides. On lettuce, &c.

14. Villica. *Cream-spot Tyger Moth*. Antennæ, Head, and Thorax black, with a white spot on each side the latter. 1st Wings black, with 8 large irregular cream-coloured spots. Abdomen orange, with black spots. Length near 1 inch. Caterpillar

terpillar hairy, foxy. On elms, nettles, &c.

15. *Plantaginis. Wood Tyger Moth.* Antennæ of the male feathered; of the female, like bristles. First Wings black, with irregular broad white lines. Second Wings yellow, with black spots. In the female, the broad lines are yellow. Abdomen red at the sides. Length $\frac{1}{2}$ inch. Caterpillar hairy, black, with a red Head. On plantain, &c.

16. *Monacha. Black Arches.* First Wings white, transversely waved with black. Second Wings bluish white, with black dots in the margin. Abdomen red, pointed. Caterpillar yellow-white, with black spots, hairy. On willows, oaks, &c. Length of the Moth $\frac{1}{4}$ inch.

17. *Dispar. Gipsy Moth.* Antennæ black, and remarkably feathered, especially those of the female. First Wings grey, with 4 transverse zig-zag lines, and a black spot. External margin of both Wings spotted with black. Abdomen of the female round, thick, and covered with thick down at the extremity. Caterpillar hairy. On oaks, ash, apple-trees, &c. Frequent about Ealing in Middlesex.

18. *Chrysorrhæa. Yellow-tail Moth.* Antennæ feathered. Entirely white, except the extremity of the Abdomen, which is yellow and hairy. Caterpillar black and red, hairy. On apple-trees, oaks, &c.

19. *Salicis.*

19. *Salicis. White Satin Moth.* Antennæ feathered, black. Body grey. Wings white. Legs black and white. Length near an inch. Caterpillar hairy, black, spotted with white. On willows, poplars, &c.

20. *Coryli. Nut-tree Tussock Moth.* Antennæ taper. First Wings grey and brown; transversely waved. Second Wings white, with a brown and white margin. Caterpillar red-brown, with 2 dorsal and 1 tail tuft.

*** *No Trunk. Wings depressed. Back hairy.*

21. *Pudebunda. Yellow Tussock Moth.* Antennæ feathered, brown. Wings light grey, with faint transverse waves on the 1st pair. Fore-feet stretched out beyond the Antennæ. Length 1 inch. Caterpillar greenish yellow, with 4 brushes on the back, and a red tail. On fruit trees.

22. *Fascelina. Black Tussock Moth.* Antennæ feathered. Brown-grey, with 2 transverse red-brown waves on the 1st Wings. Second Wings plain, with longitudinal and a slight margin. Abdomen grey, broad, and thick set with down, at the extremity. Caterpillar, with 5 white brushes, tipt with black. On hedges.

23. *Antiqua. White-spot Tussock Moth.* Antennæ feathered, black. First Wings cloudy orange, waved and spotted with brown, and

and a white spot on the posterior angle. Female without Wings. Caterpillar with 4 white brushes on its back. On trees. Length of the Moth a little more than $\frac{1}{4}$ inch.

24. *Gonostigma. Orange Tussock Moth.* Differs very little from the last, except that the spot on the Wings is not white. Female without Wings.

25. *Cæruleocephala. Black-thorn Moth.* Antennæ feathered. Body brown. First Wings brown, marbled with bluish green in the form of a double contiguous circle. Second Wings lighter coloured, plain, with a brownish margin, scalloped. Length $\frac{3}{4}$ inch. Caterpillar green and yellow, with small black dots. On fruit trees.

26. *Ziczac. Pebble Moth.* Brown and white, clouded like an Agate. Antennæ feathered. On the interior margin of the 1st Wings, a remarkable appendix; 2d Wings scalloped. Length 7 lines. Caterpillar smooth, with 2 protuberances on its back.

27. *Cossus. Goat Moth.* Grey, with short black irregular curved lines. Antennæ foliated. Abdomen yellowish, with dark curved belts. Length $1\frac{1}{2}$ inch. Caterpillar red, with few hairs and a black head. In rotten wood.

**** *Spiral Trunks; Back smooth; Wings deflexed.*

28. *Lubricipeda. Spotted Buff Moth.* Irregularly spotted with black. Abdomen orange,
L with

with 5 black spots on the back and sides.
Caterpillar light brown, hairy. On
fruit trees.

29. *Russula*. Antennæ feathered.
Body and Wings yellow, with a red
border. On the 1st Wings, a brown
and red spot; on the 2d two transverse
stripes, and a brown arch.

***** *Back crested.*

30. *Libatrix*. *Furbelow Moth*. Antennæ a little
feathered. Head and Thorax yellow.
Wings, truncated, orange, variegated
with brown and ash-colour, with a
white spot near the base. Caterpillar
smooth, green, with a white line along
the Back. On willows, rose-trees, &c.

31. *Oo*. *Scallop-winged Oak Moth*. First Wings
brown-grey, with circles in the middle.
Second Wings grey, with a brown
margin. Caterpillar smooth, orange,
with white spots. On oaks.

32. *Humuli*. *Otter Moth*. Antennæ short. Wings
long, yellow, with oblique red striæ.
Wings of the male white. Body yellow
in both. No Trunk.

** *Spiral Trunk; Back smooth, without crest.*

33. *Dommula*. *Scarlet Tyger Moth*. First Wings
black with orange spots. Second
Wings scarlet, with black spots. Thorax
black, with 2 yellow spots. Abdomen
black and scarlet. Caterpillar brown
and yellow. On nettles, grass, &c.

34. *Fuliginosa*.

34. *Fuliginosa*. *Spotted red and white Under-wing Moth*. First Wings brown-red, with 2 small black dots. Second Wings bluish, with 2 black dots, and a brown margin. Length half an inch. Caterpillar hairy, brown. On turnips, mustard, &c.

35. *Jacobææ*. *Cinnabar Moth*. Antennæ and Body black. First Wings black, with a longitudinal red line near the anterior margin, and 2 red spots near the exterior. Second Wings red, with a black margin. Length 8 lines. Caterpillar, with alternate black and orange belts. On ragwort.

36. *Quadra*. *Yellow July Oak Moth*. Yellow, with 2 black-blue spots on the 1st Wings. Caterpillar hairy, yellowish, with one large black-brown spot on the middle of his back.

37. *Nupta*. *Crimson under-wing Moth*. First Wings grey and brown undulated; 2d crimson with 2 broad transverse black waves. Length one inch. Caterpillar smooth, grey. On oaks.

38. *Pacta*. *Willow red-under-wing Moth*. Abdomen, above reddish. First Wings irregularly waved, grey and brown; 2d crimson, with 2 broad black waves, and grey exterior margin. Length above an inch. Caterpillar brown, with few hairs. On willows.

L 2

39. *Pronuba*.

39. *Pronuba. Great yellow Under-wing Moth.* Antennæ taper. Body and 1st Wings brown-grey, clouded or waved, with a black spot in the middle, and another near the exterior angle. Second Wings yellow, with a broad black wave near the exterior margin. Length one inch. Caterpillar smooth, yellow. In gardens. Feeds in the night.
40. *Fraxini. Chiefden Nonparil.* Antennæ taper. Thorax brown. Abdomen bluish. First Wings grey, transversely undulated, with a large white spot in the centre. Second Wings black, with a broad transverse blue curve in the middle. Margin of both Wings scalloped. Length $1\frac{1}{2}$ inch. Rare.
41. *Chrysitis. Green Silken Moth.* Head, Antennæ and Thorax pale yellow. First Wings brown, marbled, with 2 transverse gold-green waves, and a whitish spot. Second Wings brown-grey. Margin of the Wings scalloped. Caterpillar smooth, orange, with white spots.
42. *Gamina. Lambda Moth.* Wings brown, marbled, with a white or yellowish mark, resembling the Greek lambda, on the 1st pair. Length 8 lines. Caterpillar smooth, green. On sage, &c.
43. *Festuca. Gold-spot Moth.* First Wings brown, with 2 or 3 silver-gold spots. Second Wings plain yellow. Head, Antennæ, Thorax

Thorax orange. Abdomen yellow. Length 8 lines. Caterpillar smooth, green. On water-grass, &c.

44. *Meticulosa. Angle Shades.* Antennæ taper. Wings grey, marbled. First pair reddish at the base, brown in the middle, with a threefold triangle near the anterior margin. Second Wings light grey, with a black speck in the center. Margin of both Wings irregularly indented. Caterpillar smooth, green. On pot herbs.

45. *Pfi. Dagger Moth.* Antennæ taper. Body grey. Eyes black. First Wings whitish, with 3 or 4 black marks in the form of daggers, or like the Greek psi. Second Wings plain, with scalloped margin. Length 9 lines. Caterpillar hairy, black, yellow, with a black horn. Sides black and red.

46. *Aceris. Sycamore Tussock Moth.* Antennæ taper. First Wings bluish grey, with undulated black lines, and an oval ring. Second Wings plain with a double dotted margin. Caterpillar yellow, with a long orange tuft. On maples, walnut-trees, &c.

47. *Exfoleta. Sword-grass Moth.* Corselet black-brown. Abdomen reddish white. First Wings long, narrow, anterior half whitish, with brown lines, posterior red-brown. Second Wings dusky, with a whitish scalloped margin. Caterpillar

pillar green, with a yellow lateral line.
On Chenopodium, Campanula, &c.

48. *Verbasci. Water-Betsey Moth.* Antennæ taper. First Wings long, narrow, brown-grey, longitudinally streaked; lightest in the middle, margin indented. Second Wings brown, small. Caterpillar yellow, smooth, with 4 black spots on each ring. Length of the Moth nearly one inch.

49. *Rumicis. Bramble Moth.* First Wings brown, clouded with black, with annular white spots, and a transverse white line near the margin. Second Wings dark brown, with a whitish scalloped margin. Caterpillar black-brown, hairy. On brambles and thistles.

50. *Oxyacanthæ. Ealing's Glory.* Antennæ taper. First Wings dark brown, with 2 irregular orange spots, a transverse line and external margin of the same colour; also a blue transverse line, and blue posterior margin. Second Wings dusky. Length not quite 1 inch. Caterpillar brown and yellow. On thorns.

51. *Oleracea.* Antennæ taper. Body thick, short, hairy. First Wings narrow, red-black, with a whitish circle near the middle, and a white transverse line, with 2 points in the middle. Second Wings reddish grey, with a black spot in the center. Caterpillar striped purple and yellow. On peas, beans, &c.

52. *Pisi,*

52. *Pisi. Broom Moth.* Body darkish grey. First Wings red-brown, clouded with black, and light yellow; 2 yellowish spots in the middle, and a yellowish narrow undulated line near the exterior margin. Second Wings grey, with a whitish margin. Length not quite 1 inch. Caterpillar smooth, brownish yellow. On broom, peas, &c.
53. *Atriplicis. Wild Arrach Moth.* First Wings brown, blue, and yellow, clouded; a double yellow wave near the exterior margin, and a longish bifid transverse yellow mark near the center. Second Wings brown. Caterpillar smooth, brown.
54. *Delphinii. Pease Blossom.* First Wings purplish, with 2 yellowish transverse waves. Second Wings dusky. Small size. Caterpillar smooth, yellowish, with black spots. On Larkspur.
55. *Oitrago. Sallow Moth.* Body thick, yellow-brown. First Wings angulated, yellow, with 3 or 4 oblique transverse purplish lines, with intermediate red-brown spots. Second Wings whitish. Length 7 lines. Caterpillar brown, sides yellow.

* *Geometræ. Antennæ feathered.*

56. *Amataria. Buff Argus Moth.* First Wings angulated, buff, sprinkled with brown, and a red-brown transverse line in the middle. Second Wings paler, with a red-brown margin. Caterpillar green,
L 4 with

with yellow rings. On oaks. Length of the Moth half an inch.

57. *Sambucaria*. *Swallow-tail Moth*. Wings angulated, pale yellow, with 2 transverse straight lines on each. Second Wings, with 2 Tails and 2 black spots. Large size. Caterpillar brown. On brambles.

58. *Lacertinaria*. *Wild-Rose Moth*. Wings angulated, brown-yellow, with 2 transverse curved lines on each Wing, and a brown spot between those of the 1st pair. Caterpillar smooth, brown, back angulated. On oaks, &c.

59. *Syringaria*. *Richmond Beauty*. Wings angulated, indented, orange clouded. Beneath darker, with a black spot in the middle of each Wing. Length 9 lines. Caterpillar smooth, with 10 feet, and a horn on the 8th ring.

60. *Prunaria*. *Orange Moth*. Wings orange, sprinkled with brown, and a semilunar spot on the 1st pair. Female paler than the Male. Caterpillar brown yellow, with 2 spines before and behind. On thorns.

61. *Betularia*. *Spotted Elm Moth*. Wings white, spotted and waved with black-brown. Caterpillar pale green, smooth, with 2 black-brown spots near the Tail. Middle size. On elms, willows, &c.

62. *Wauaria*. *Gooseberry Moth*. Wings orange-grey; on the anterior margin of the 1st pair

pair 4 transverse irregular dark-brown spots. Caterpillar green and white, hairy. On gooseberry-bushes. *Wlks.* 42.

63. *Papilionaria*. *Green Broom Moth*. Wings green, with a transverse white wave, and white margin. Length 7 lines.

****** *Antennæ taper, like bristles.*

64. *Viridata*. Wings angular, green, with a pale transverse line, and yellowish margin. Small. On oaks.

65. *Chærophillata*. *Great Chimney Sweeper*. Black. First Wings tipped with white, and erect. Caterpillar green. In meadows.

66. *Grossularia*. *Magpie, or Currant-Moth*. Antennæ and Legs black. Body yellow, with black spots. Wings white, with many black patches, and a transverse yellow wave on the 1st pair. Caterpillar white, with black spots on the back; belly yellow. On currant and gooseberry-bushes.

67. *Cratægata*. *Brimstone Moth*. Antennæ, Trunk, and Legs deep yellow. Eyes black. Wings brimstone, with 3 irregular brown spots on the anterior margin of the 1st pair. Caterpillar smooth, with a dorsal spine. On the white-thorn.

68. *Urticata*. Corselet and Tail yellow. Abdomen grey. Wings grey, with black-blue spots, two rows of which form transverse lines near the exterior

exterior margin. The base of the Wings sometimes yellowish. Small. Caterpillar smooth, green. On nettles.

69. *Brumata*. Wings brown-grey; with faint black transverse lines. Wings of the Female very short, grey, with black spots. Caterpillar green, with a white line on the sides. Very destructive to apple-trees.
70. *Prasinana*. *Green Moth, with silver lines*. Body green and white. First Wings green, with 3 oblique white lines. Second Wings pale green. Margin orange. Caterpillar yellow and green. Anus orange. On ash, oaks, &c.
71. *Viridana*. *Small Green Oak Moth*. First Wings green, immaculate; 2d dusky. Caterpillar smooth, green.
72. *Oporana*. *Plumb-tree Moth*. Wings angular, red-brown, clouded and reticulated with black. Caterpillar smooth, green.
73. *Rostralis*. Wings brown-grey: on the 1st pair 2 spots, and a dark line near the extrem angle. Caterpillar, on nettles.
74. *Verticalis*. *Mother of Pearl Moth*. Wings yellowish white, with faint brownish broken waves. Beneath yellowish. Length 8 lines. Caterpillar green and white. On nettles.
75. *Evonymella*. *Small Ermine Moth*. First Wings silver-white, with 3 or 4 rows of

of small black spots. Second Wings lead colour. Abdomen black above, white beneath. Length half an inch. Caterpillar yellowish white, with 10 black spots on each side. On fruit trees.

76. *Culmella*. *Small Pasture Moth*. First Wings grey, with longitudinal white stræ, a silver marginal fringe, and 7 black spots ranged transversely. Wings circumvolute. In meadows on grass, its head downwards.

77. *Salicella*. *Province-rose Moth*. First Wings dark bluish grey, yellowish white in the middle, with black spots in the posterior margin. Thorax crested. Small size. Caterpillar, on rose-leaves.

78. *Tapetzella*. Head white. Wings long, circumvolute; 1st pair black half way from the Body, the other half white, with brown faint spots: 2d pair grey. Body black. Length near half an inch. Among woollen clothes.

79. *Sarcitella*. Wings bluish bright ash-colour, with a black spot in the center of each. Length 2 lines. Frequent in houses. Caterpillar, very destructive to woollen clothes.

80. *Granella*. Brown. On the 1st Wings several small dark spots, and 2 yellow ones. Head yellowish white. Eyes

156 INSECTS. NEUROPTERA.

Eyes black. Length 4 lines. In houses and granaries.

81. *Pomonella. Codling Moth.* First Wings brown-grey, clouded. On the 2d a large red-gold spot near the posterior angle. Length near half an inch. Caterpillar orange, spotted with black. On apple-trees.

82. *Didactyla. Brown Feathered Moth.* Wings extended, bifid, pointed, red-brown, with white long spots. Second Wings white, tripartite, spotted. Legs white, annulated.

83. *Pentadactyla. White Feathered Moth.* Eyes black. Body pale yellow. Wings very white, extended: 1st pair bifid; 2d tripartite. Caterpillar green.

84. *Hexadactyla. Many-feathered Moth.* Wings extended, grey, with brown transverse waves: 1st Wings of 8 feathers; 2d of 4, which the insect expands and contracts like a fan. Length 6 lines. On the *Lonicera*, &c.

IV. NEUROPTERA.

Wings 4, naked, transparent, reticulated with veins or nerves. Tail without sting.

LIBELLULA. Adder-bolts, or Dragon-flies. Mouth with 2 long lateral jaws. Antennæ very short. Tail of the Male forked. Wings extended.

I. 4-macu-

1. 4-maculata. Brown. Thorax covered with grey hair. Wings yellowish at the base, with 2 brown spots on the exterior margin. Length $1\frac{1}{4}$ inch. I caught this insect on board the Harwich packet, many leagues from land.
2. Flaviola. Eyes large, and near together. Thorax black-brown, hairy with a yellow spot on each side. Abdomen broad, flat, short, yellow above, black beneath. Wings with a black spot near the end, and a large yellow-brown spot at the base. Length $1\frac{1}{2}$ inch. Flies quick.
3. Depressa. Eyes brown. Head and Thorax greenish, with 2 yellow transverse lines. A brown spot on the exterior margin of the Wings. Abdomen cylindrical, black above, yellow beneath, and covered with a bluish grey dust. Length $1\frac{1}{2}$ inch.
4. Vulgatissima. Brown. Front and sides yellow. An oblong brown spot on the exterior margin of the Wings, the sides of which spot are black. Length more than half an inch.
5. Ænea. Green-gold. Wings yellowish, with marginal brown spots. The male has 4 bristles at the Tail. Length $1\frac{1}{4}$ inch.
6. Grandis. Head yellow. Eyes brown, contiguous and large. Thorax brown with

with 2 oblique yellow lines on each side. Abdomen red-brown, with white spots. Wings yellowish, with a brown marginal spot, and a brown protuberance at the base of each Wing. Length $2\frac{3}{4}$ inches.

7. Forcipata. Head yellow. Eyes large, brown. Thorax greenish brown, with 3 black oblique lines on each side. Abdomen brown, of 9 ringlets, with a yellow transverse line in the middle, and 2 yellow spots on the side of each ringlet. Length $2\frac{1}{4}$ inches.

8. Virgo. Body Saxon-greenish blue. Eyes distant, remote. Wings of equal length, bluish, brown in the middle, yellowish at the base and apex, and without marginal spot. Length 2 inches.

9. Puella. Body blue, with 3 longitudinal brown lines on the Thorax, and a black ringlet near the extremity of the Abdomen; the 2 last brown. Wings whitish, finely reticulated with black veins, and a black marginal spot. Eyes distant, remote. Length $1\frac{1}{2}$ inch.

ÉPHEMERA. Antennæ very short. Two protuberances before the Eyes. Wings erect; 2d pair small. Two or three Tails like bristles. Short lived.

i. Vulgata.

1. *Vulgata*. Brown. Wings, with brown veins, and 5 or 6 brown spots. Three Tails as long as the Body. Length 2 lines.
2. *Vespertina*. Black. Exterior margin of the 1st Wings black, the rest transparent. Second Wings white. Antennæ and Tails 3 times the length of the Body. Length 1 line.
3. *Culiciformis*. Brown. Wings transparent. Two whitish Tails. Length 2 lines.
4. *Horaria*. Brown. Wings diaphanous, exterior margin thicker and brown. Tails 2, white, with brown spots. Fore Legs long. Length 3 lines.
5. *Striata*. Thorax brown. Abdomen white. Wings brownish, striated. Tails 2, length of the Body. Length 2 lines.

PHRYGANEA. Palpi 4. Protuberances before the Eyes 3. Antennæ longer than the Thorax. Wings crossing each other; 2d pair folded.

1. *Bicaudata*. Dark brown, with a yellow longitudinal line on the Head and Thorax. Antennæ long, filiform. Wings $\frac{2}{3}$ longer than the Body. Length 8 lines.

2. *Nebulosa*.

2. *Nebulosa*. Brown. Wings grey. .
Tails 2, short. Length half an inch.
3. *Striata*. Red-brown. Eyes black. Wings
clouded, lateral, and raised obliquely at
the ends. Antennæ long. Length 1
inch.
4. *Rhomboidica*. Brownish yellow.
On the 1st Wings a large oblique white
spot. Length 7 lines.
5. *Flavilatera*. Black. Wings brown ;
1st pair dilated at the base. Antennæ
short. Length 7 lines.
6. *Nigra*. Antennæ twice as long as
the Body. Wings greenish black.
7. *Longicornis*. Brownish grey. An-
tennæ 3 times as long as the Body. First
Wings spotted with black. Legs whitish.
Length 3 lines.

HEMEROBIUS. Mouth prominent. *Palpi*
4. Wings deflexed. Antennæ longer
than the Thorax, taper, extended.

1. *Pectinicornis*. *Golden Eye*. Antennæ length
of the Body. Yellowish green. Wings
much longer than the Body, diaphanous,
with green veins. Minute black dots
on the Abdomen. On plants.
2. *Chrysops*. Like the last, except
that the Antennæ are shorter, and the
veins of the Wings punctured with
brown. Length 3 lines. *Geoff.* 254. 2.
3. Sex-

domen compressed, acute beneath, and joined to the Thorax by a short pedicle.

1. *Glechomæ*. Brown. Thorax hairy. In the tubercles on the leaves of ground ivy.
2. *Quercus baccarum*. Black. Base of the Antennæ and Legs yellow. In the small tubercles on the under side of oak leaves.
3. *Quercus folii*. Black. Thorax striated. Legs grey. In the large tubercles on oak leaves.
4. *Quercus petioli*. Head black. Body brown, polished. Extremity of the Abdomen hairy. In the tubercles on the petiolus of oak leaves.
5. *Quercus gemmæ*. Greenish black, a little bronzed. Antennæ and Legs orange. In the large imbricated galls on the extream buds of oak-trees.

TENTHREDO. Abdomen of equal thickness, and closely united to the Thorax. Sting ferrated, between two valves. Second Wings shortest.

1. *Femorata*. Antennæ yellow, of 9 joints. Black, hairy. A yellow semi-lunar membrane on the 1st ring of the Abdomen. Wings diaphanous, the exterior border thick, brown. Length 1 inch.

2. *Lutæa*.

2. *Lutæa*. Antennæ clavated, yellow, the last joint black. Third, fourth, and fifth ring of the Abdomen brown, the rest black. Legs black, feet yellow. Wings, with brown veins, and brown posterior margin. On Willows, Alder, Birch.
3. *Rustica*. Black, except the upper lip, base of the Antennæ, 2 short lines on the Thorax, the point of the Thorax and the margin of the 2d, 5th and 6th segment of the Abdomen, which are yellow. Wings brown. Legs yellowish. Length half an inch. On Willows.
4. *Scrophulariæ*. Black. Margins of the segments of the Abdomen yellow, except the 2d and 3d. Upper lip yellow. Antennæ red-brown. On the Thorax 2 yellow lines and 3 spots. Wings and Legs tawny. Very like a Wasp. Length half an inch. On Figwort.
5. *Rosæ*. Head, Antennæ, and Thorax black, with a yellow spot on each side of the latter. Abdomen orange. Wings tawny, with the exterior border black. Length 4 lines. On rose-trees.
6. *Cynosbati*. Black, with 3 yellow spots on the Thorax. Legs red-brown; hind legs white in the middle, black above and below. Length $2\frac{1}{2}$ lines.
7. *Caprææ*. Yellow. Crown and Corselet black. Antennæ of 9 joints.

Exterior border of the Wings black, thick. Length 4 lines. On Willows.

SIREX. Two strong Jaws. Palpi 2. Antennæ filiform, of more than 20 joints. Sting rigid, serrated. Abdomen united to the Thorax. Wings narrow, 2d pair shortest.

1. **Gigas.** Antennæ half the length of the Body, of 23 joints. Head black, with a yellow spot behind each eye. Thorax black, hairy. Abdomen of 9 segments, black and yellow. Sting lodged in a groove under the Belly. Length 13 lines.

ICHNEUMON. Jaws, without tongue. Antennæ of more than 30 joints, long, filiform, vibrating. Sting within a bivalve sheath.

1. **Lucinatorius.** Black. Upper lip, base of the Antennæ, point of the Corselet, 2d and 3d segment of the Abdomen yellow. Length near half an inch.
2. **Persvatorius.** Black. Upper lip white. Thorax with 3 white lines on each side. Target with 2 white spots. Abdomen cylindrical, 1st segment white, 2d partly white, and 4 white spots on the rest. Legs brown.
3. **Comitator.** Black. Middle of the Antennæ white. Length half an inch. In Wasps nests.

4. **Peregrinator**

4. Peregrinator. Black. Antennæ white in the middle. Four first segments of the Abdomen brown-yellow, the last white. Legs tawny. Wings brownish. Length $3\frac{1}{2}$ lines.
5. Incubitor. Head and Thorax black. Antennæ brown, white in the middle. Legs and Abdomen tawny, black at the extremity. Length 3 lines.
6. Manifestator. Black. Antennæ taper. Legs tawny. Sting twice as long as the Body. Length 1 inch. In woods.
7. Inculcator. Black. Abdomen and Legs tawny. Pedicle between the Thorax and Abdomen long and small. A marginal spot on the Wings. Abdomen compressed and large towards the end. Length 2 lines.
8. Pugillator. Black. Antennæ length of the Body. Second, third, and fourth segments of the Abdomen yellow. Legs yellow. Length 6 lines.
9. Ruspator. Black. Legs tawny, hind thighs thick, with a spine on the interior side. Length $3\frac{1}{2}$ lines.
10. Jaculator. Black, slender, long. A white ringlet near the origin of the Legs. Hind legs longer and thicker than the rest. Abdomen curved. Sting longer than the Body.

11. *Luteus*. Tawny. Antennæ long, taper. Abdomen curved, compressed; Pedicle long, slender. Sting short. A marginal brown spot on the Wings. Length 1 inch. *Geoff.* 330.
12. *Ramidulus*. Very like the last. Thorax beneath, and the extremity of the Abdomen black. Length 8 lines.
13. *Bedeguaris*. Green-gold. Antennæ of 11 joints, elbowed, filiform. Legs pale. Sting longer than the Body. Length $1\frac{1}{2}$ line.
14. *Puparum*. Blue, polished. Abdomen gold. Legs pale. Otherwise like the last. Length 2 lines. In the chrysalis of Butterflies.
15. *Aphidum*. Black. Legs yellow. Antennæ as long as the Body. Length 1 line. Breeds in the Body of Aphides, or Lice of trees and plants.
16. *Globatus*. Black. Legs black and orange. Antennæ length of the Body. A small marginal speck on the Wings. Length 2 lines. Breeds in the white silky balls, about 1 inch long, which are found frequently on different plants in meadows.
17. *Glomeratus*. Like the last, except that the Antennæ are not so long, and the Legs are yellow. Breeds in the Caterpillars of the Cabbage Butterfly.
18. *Pectinicornis*. Green-brown-orange. Antennæ branched, yellowish. Legs

Legs white. Length $2\frac{1}{2}$ lines. In the chrysalis of Butterflies.

SPHEX. Jaws, without Tongue. Antennæ of 10 joints. Wings incumbent, not folded. Sting rigid.

1. Viatica. Black. Antennæ short, thick. Three first segments of the Abdomen red-brown. Pedicle short. Length half an inch. *Geoff.* 354. n. 74.
2. Cribraria. Black, with yellow ringlets on the Abdomen. Antennæ short, and turned backwards. Fore legs broad, with an appendix like a shield.

CHRYSIS. Thorax joined to the Abdomen by a short pedicle. Sting simple. Wings not folded. Antennæ filiform, of 11 long and 11 short joints.

1. Ignita. Blue-green-gold. Posterior part of the Abdomen polished copper, with 4 spines on the last segment. Length 4 lines. In walls.

VESPA. Jaws, without Trunk. First Wings folded. Sting concealed. Body smooth.

1. Crabro. *Hornet*. Antennæ tawny. Corselet black in the center, edges brown. Segments of the Abdomen black on the anterior part, yellow on the posterior, with 2 black spots on each. Length 1 inch. Builds in hollow trees.

2. *Vulgaris*. *Common Wasp*. Corselet black, with 6 yellow spots. *Male*: segments of the Abdomen 7, yellow, with a black triangle on each. Head yellow. Antennæ long. *Female*: upper lip yellow. Antennæ short. Segments 6, with 2 lateral black spots on each; larger than the Male.

3. *Coarctata*. *Small Wasp*. Antennæ black, yellowish at the base. Head black, with a yellow spot between the Antennæ, and another at the base of the upper lip. Corselet black with 2 yellow spots. Each segment of the Abdomen bordered with yellow; the 1st infundibuliform, 2d campanulate, and larger than the rest. Length half an inch.

APIS. Jaws, with a Trunk bent downwards. Antennæ elbowed in the middle, 1st joint longest. Wings plain. Body hairy. Abdomen connected by a pedicle.

1. *Centuncularis*. Black. Body long, narrow. Head, Thorax, and Legs covered with greyish hair. Abdomen above smooth, beneath covered with tawny hair. Builds in old trees. Length $2\frac{1}{2}$ lines.

2. *Rufa*. *Small Field Bee*. Front white. Abdomen short, covered above with tawny hair; Thorax with grey.

3. *Mellifica*.

3. Mellifica. *Common Hive Bee*. Needs no description.
4. Manicata. Black. Fore legs very hairy. Yellow spots on each side of the Abdomen, and 5 crotchets at the extremity. Length 7 lines. Very like a Wasp, but hairy. On flowers.
5. Conica. Thorax black, yellowish at the roots of the Wings. Abdomen very acute; margins of the segments light yellow. Builds in the ground.
6. Terrestris. *Humble Bee*. Black, very hairy, with a yellow belt on the Thorax. Anus white. Builds deep in the ground.
7. Subterranea. *Great Humble Bee*. Black, very hairy. Trunk long and branched. Anus red-brown.

FORMICA. An erect squamula or scale, between the Thorax and Abdomen. Females and Neutrals have a Sting concealed. Males and Females have Wings; Neutrals none.

1. Herculeana. *Horse Ant*. Abdomen oval. Thighs red-brown. Much larger than the common Ant.
2. Rufa. Front and Thorax yellowish; the rest red-brown. Length 3 lines, In gardens. *Geoff.* 428. n. 4.

3. Fulca

3. *Fusca. Common Ant.* Brown, polished. Wings white, larger than the Body. Length $2\frac{1}{2}$ lines. *Geoff.* 428. n. 5.
4. *Nigra.* Black. Wings brownish on the upper part, and larger than the Body. Length $1\frac{1}{2}$ line. *Geoff.* 429. n. 6.
5. *Rubra. Little Red Ant.* Clouded, with a black spot under the Abdomen. Eyes black. Very small.

VI. DIPTERA.

Wings 2.

OESTRUS. No Mouth, but 3 punctures, without Trunk or Beak. Antennæ taper, proceeding from a lenticular joint.

1. *Bovis. Breeze, or Gad Fly.* Thorax yellow, with a black transverse line between the Wings. Abdomen tawny, with fine black transverse lines; last segment black. Wings white, with a brown transverse line, and 3 brown spots. Size of the large blue Fly. Deposits its eggs under the skin on the backs of Oxen.
2. *Hæmoridalis.* Body long, black, covered with tawny hair. Middle of the Thorax less hairy. Wings immaculate. Antennæ very short. Length half an inch.

inch. Deposits its eggs in the rectum of horses.

3. Ovis. *Grey Fly*. Spotted with black. Front pale yellow. Legs brownish. Wings with short black veins. Length half an inch. Breeds in the frontal sinus of Sheep.

TIPULA. Head long. Palpi 4, curved. Trunk very short.

1. Rivosa. Brown-grey. Eyes black. Antennæ feathered. Wings larger than the Body, white in the middle, with 3 brown spots near each margin. Tail of the Female bifid. Length 1 inch.
2. Crocata. Black spotted with yellow. Legs tawny, with black feet, and a black ring round the posterior thighs. Wings tawny, with a marginal brown spot. Length 7 lines. In meadows.
3. Oleracea. *Long-Legs*. Brown-ash colour. Antennæ simple. Wings brown at the exterior margin, and in the Male longer than the Body. Length near an inch.
4. Hortorum. Like the last, but much less. Wings faintly spotted with white, and spread with thick black veins.
5. Contaminata. Black. Legs livid yellow, with black joints. Two yellow spots on the 2d, 3d, 4th, and 5th segments of the Abdomen. Five or six dark

dark spots on the exterior margin of each Wing. Length half an inch.

6. *Lunata*. Ash-colour, with a whitish line on each side of the Abdomen, and a white semilunar spot on the exterior margin of each Wing. Length 8 lines. In meadows.
7. *Cornicina*. Yellow. Antennæ, Eyes and Palpi black. Three oblique black lines on the Corselet. Legs very long. Length 6 lines. In meadows. *Raj.* 73. 7.
8. *Plumosa*. *Sea Tipula*. Brown. Thorax greenish. Eyes black. Fore legs longest. Wings shorter than the Abdomen. Length 3 lines. Resembles a Gnat.
9. *Littoralis*. Brown. Abdomen green, 3 last segments brown. Wings diaphanous. Fore legs long. Length 2 lines. On trees.
10. *Motitatrix*. Pale green, or flesh-colour, with black spots. Three longitudinal black lines on the Corselet. Legs black, white in the middle. Fore legs long. Length 1 line.
11. *Monilis*. Black. Legs white, with 9 black rings. Wings white, with grey spots, and a marginal black one. Length 2 lines. In meadows, and on windows.
12. *Febrilis*. Black. Wings white, exterior border black. Antennæ knotted, short.

short. Wings cross each other. Length
4 lines.

13. Hortulana. Antennæ knotted,
short, black. Corselet red, smooth.
Abdomen yellowish. Wings diaphan-
ous, brownish, exterior border black.
Head very small. Male black, less.
14. Phalænoides. Dark grey. Wings
twice as long as the Body, fringed.
Antennæ of 11 beads, perfoliated.
Length 1 line. Scarce.

MUSCA. A soft flexible Trunk, with la-
teral Lips at the end. No Palpi.

1. Chamæleon. Brown. Antennæ
taper, broken. Eyes large. Abdomen
nearly circular, with 3 yellow triangu-
lar spots on each side, and one at the
extremity. Legs yellow. Thighs brown.
Length 6 lines.
2. Hydroleon. Antennæ short, black.
Eyes green, with a transverse violet
line. Thorax brown. Abdomen green,
with a black longitudinal line in the
middle. Wings very transparent. Legs
yellowish. Length $3\frac{1}{2}$ lines.
3. Morio. Black, hairy, with white
spots on each side of the Abdomen.
Wings much larger than the Body, in-
terior margin white. Length 3—6 lines.
In gardens.
4. Nemorum. Head grey. Eyes
brown. Thorax covered with grey
hair.

hair. Abdomen, of 4 segments, above black, with 2 large yellow spots on each side, and 3 white transverse lines. Legs brown. Wings transparent with a black marginal spot. Length $4\frac{1}{2}$ lines.

5. Tenax. Very like a Bee. Eyes brown. Front white. Thorax brown, hairy. Abdomen of 4 segments, with a large yellow spot on each side. Middle of the Wings tawny. Legs brown, Feet white. Length half an inch.
6. Pyrastris. Head yellow. Eyes large, brown. Corselet dark green, with a few brown hairs. Abdomen above black, with 6 white spots. Legs blackish, with yellow joints. In gardens.
7. Menthastri. Front yellow. Eyes brown. Corselet greenish black, with a yellow line on each side. Abdomen of 5 segments with 5 transverse yellow lines. Length 4 lines. On flowers.
8. Pipiens. Black, smooth. Long, narrow. Front and sides of the Thorax yellow. Abdomen of 4 segments, with 2 yellow spots on each side. Two hind Legs longer and stronger, black with 2 yellow spots, and a yellow ring on each thigh. On mint, &c. Length $3\frac{1}{2}$ lines.
9. Inanis. Antennæ, proceeding from the Trunk, of 5 globules, and a sili-form terminal joint. Thorax black, polished.

polished. Abdomen above white, with 2 black belts. Beneath black. Length 2 lines. On flowers.

10. *Pellucens*. Antennæ feathered. Trunk lodged within the Beak. Eyes red-brown. Front yellow. Corselet black. Abdomen, anterior half white, posterior black. Wings transparent, with a transverse black line. Length half an inch. On rose-trees.
11. *Cæsar*. Green-gold. Legs black. Eyes reddish. Length 3 lines. In woods and gardens.
12. *Cadaverina*. Eyes reddish. Head and Thorax blue. Abdomen green-gold. Length 2 lines.
13. *Vomitoria*. *Blue Flesh Fly*. Eyes brown. Plumes of the Antennæ branched. Thorax black. Abdomen dark blue, large. Legs black. Length near half an inch. *Raj. 271.*
14. *Carnaria*. *Common Flesh Fly*. Black, with 4 longitudinal grey lines on the Corselet. Abdomen of 5 segments, chequered, with black and grey. Anus reddish. Legs black. Length 4 lines.
15. *Domestica*. *Common House Fly*. Black, with 5 longitudinal grey lines on the Corselet. Abdomen of 4 segments, chequered. Length 3 lines.

* *Antennæ*

* *Antennæ with a lateral hair.*

16. Cellaris. Yellow-brown. Abdomen of 6 segments. Wings large, with 3 longitudinal veins. Length $1\frac{1}{4}$ inch. Frequently found dead in wine and vinegar.
17. Putris. Black, smooth. Wings whitish. Eyes brown. Size of a Gnat. Breeds in cheese and dung.
18. Stercoraria. Front yellowish. Eyes reddish. Base and exterior border of the Wings yellowish, with a brown spot and transverse line near the middle. Male grey, covered with tawny down. Length 3 lines. On dung.
19. Vibrans. Black, cylindrical. Head red. Abdomen obtuse. Wings white, with a black spot near the extremity. Legs of the Female yellow. Length $2\frac{1}{4}$ lines. Wings constantly vibrating. On trees.
20. Flava. Yellow. Eyes black. Wings white, with obscure yellow veins. Length 1 line. On flowers.
21. Solstitialis. Head yellow. Eyes brown. Thorax grey. Abdomen black. Legs tawny. Wings whitish, with 3 brown lines, and a small notch in the exterior margin. Length 2 lines. On thistles.

TABANUS.

TABANUS. Antennæ conic, of 4 segments. Trunk fleshy, terminated by 2 lips. Palpi, one on each side of the Trunk.

1. *Bovinus.* *Great Horse Fly.* Head and Thorax grey. Eyes dark brown. Abdomen yellowish, with a triangular white spot in the middle of each segment. Legs yellow. Wings dusky with brown veins. Length 1 inch.

2. *Pluvialis.* Brown-grey. Eyes green, with brown rays. Corselet brown, with 7 longitudinal grey lines. Wings dotted with white, and a marginal black spot. Legs alternately brown and white. Length 4 lines. In meadows.

3. *Cæcutiens.* Head brown. Eyes green and brown, with black spots. Corselet brown, with grey lines. Abdomen above yellow, with triangular brown spots. Legs yellow. Wings white, with black and brown spots. Length $4\frac{1}{2}$ lines.

CULEX. Antennæ feathered. Trunk, a long slender syphon.

1. *Pipiens.* *Common Gnat.* Grey. Abdomen of 8 segments.

2. *Bifurcatus.* Brown-grey. Beak forked. Twice as big as the last. In watery places.

3. *Puli-*

3. Pulicaris. Brown. Wings white, with 3 brown spots. Length $\frac{3}{4}$ line. In gardens in the Spring.

CONOPS. Trunk long, jointed.

1. Calcitrans. Differs from the Common Fly, in having a hard sharp Trunk, with which it pricks our legs in Autumn.
2. Macrocephala. Black and tawny variegated, somewhat like a Wasp. Antennæ clavated, but pointed. Wings brown, clouded. Length half an inch. In meadows.

ASILUS. Trunk horny, long, straight, bivalved.

1. Crabroniformis. *Hornet Fly*. Trunk and Eyes black. Corselet convex. Three first segments of the Abdomen black, the other 4 yellow, hairy, sharp, and brown at the extremity. Length 1 inch. In wet meadows.
2. Forcipatus. Grey, hairy. Abdomen long, pointed. Sides yellowish. Length 6 lines. In gardens, &c.
3. Tipuloides. Trunk pale, long, curved downwards. Corselet ash-colour, with 3 longitudinal black lines. Wings of the Male tawny; of the Female, white, transparent. Legs long. Length 4 lines.

4. Morio. Black, smooth. Legs tawny. Length $6\frac{1}{2}$ lines. In wet woods.

BUMBYLIUS. Trunk taper, very long, sharp, between two horizontal valves.

1. Major. *Humble-Bee Fly*. Body short, thick, covered with thick grey down. Wings large, black at the base. Antennæ black, bent in the middle. Legs long, slender, black. Length 4 or 5 lines. Sucks flowers, without resting on them.
2. Medius. Body yellowish, white at the extremity. Wings, with brown spots. Hovers in the air like a Hawk, and darts with great celerity.
3. Minor. Wings clouded, without spots. In Cain-wood.

HIPPOBOSCA. Trunk bivalved, cylindrical, obtuse. Antennæ like a single hair. Feet with claws.

1. Equina. Broad, flat, scaly. Head yellow. Eyes brown. Thorax and Abdomen yellowish, with brown waves. Wings cross each other, and are much larger than the Body. Length $2\frac{1}{2}$ lines. Fastens on Dogs and Cattle.
2. Hirundinis. Head yellow. Thorax darker. Abdomen dusky, broad, flat. Wings narrow, short. Legs long, with 6 claws. In Swallows nests.

VII. APTERA.

No Wings.

LEPISMA. Legs 6, broad and scaly at their origin. Palpi 2, moveable. Antennæ filiform. Tails 3. Body scaly.

1. Saccharina. Body long, of 9 or 10 segments, diminishing from the Head to the Tail. Silvery lead colour. Somewhat like a fish. Length 4 lines. In the joints of sash windows that are wet and seldom opened.

PODURA. Legs 6. Eyes 2, composed of 8 small ones. Tail forked, elastic, inflexed. Antennæ long, taper.

1. Viridis. Round, light green. Head yellowish. Eyes black. Antennæ elbowed in the middle. Thorax very small. An angle on each side of the Abdomen, Length $\frac{1}{2}$ line. On plants in April.
2. Plumbea. Polished lead-colour. Tail almost as long as the Body. Length 1 line. On trees, solitary.
3. Villosa. Yellow-brown, streaked and spotted with black. Antennæ of 4 joints. Head and Thorax hairy. Length 2 lines. On stones.
4. Aquatica.

4. Aquatica. Black. Antennæ almost as long as the Body. Length half a line. Numerous on the leaves of Aquatic plants.

TERMES. Legs 6. Eyes 2. Antennæ taper. Mouth with 2 Jaws.

1. Pulsatorium. Antennæ length of the Body, slender. Eyes yellowish. On each segment of the Abdomen, a reddish spot on each side. Less than the common Louse. Generally thought to be the Death-watch, but Geoffroy is positive of the contrary.

PEDICULUS. Legs 6. Eyes 2. Mouth producing a sting. Antennæ length of the Thorax. Abdomen depressed, rounded, simple.

1. Humanus. *Common Louse.*
2. Pubis. *Crab Louse.* Brown. Broad and short.
3. Bovis. White, with 8 transverse tawny-red lines above, and 5 beneath.
4. Vituli. Larger than the last. Legs short, thick, grey. Abdomen lead-colour, broad, pointed.
5. Corvi. Grey. Head small, black. Antennæ turned backwards. Eight black lines on each side the Abdomen. Length 1 line.

6. Gallinæ: Head white, rounded before. Thorax large, angular. Abdomen white; with a black border.

7. Columbæ. slender, whitish; sides red-brown. Length 1 line.

PULEX. Legs 6. Eyes 2. Antennæ filiform. Trunk taper, inflexed, concealing a sting. Abdomen compressed.

1. Irritans. *Common Flea.*

ACARUS. Legs 8. Eyes 2, lateral. Tentaculæ 2, jointed.

1. Reduvius. *Sheep Louse, or Tick.* Flat, oval, with a round spot on the back. Frequently found alive in wool, a long time after it is shorn.

2. Ricinus. *Dog Tick.* Oval. Trunk long. Livid. Head and Thorax small. On the anterior part of the Abdomen an oval, brown, glossy, raised spot. Length $1\frac{1}{2}$ line.

3. Passerinus. Oval. Brown. Legs pale. Length 1 line. Very like the last. On many species of small birds.

4. Telarius. Tawny. A brown spot on each side of the Abdomen. According to Geoffroy, this insect spins a web on the bark of trees, generally on the north side, from top to bottom of the trunk; which web being dispersed by the wind, covers the fields with those

those innumerable threads which some Naturalists have mistaken for condensed vapour.

5. Aquaticus. Scarlet. Oval. Length $1\frac{1}{2}$ line. On stagnant water. Swims quick.
6. Holosericeus. *Scarlet Spider*. Like the last. On the ground, and on plants.
7. Coleoptratorum. *Beetle Tick*. Tawny. Anus whitish. Length $\frac{1}{4}$ line. I have found 2 or 300 on the Belly of one Beetle.
8. Longicornis. Head sharp. Abdomen rounded. Antennæ like Crab's-claws. Abdomen deep red. Legs paler. Length $\frac{1}{2}$ line. Under stones, &c.

PHALANGIUM. Legs 8. Eyes 2. Abdomen rounded.

1. Opilio. *Long-legged Spider*. Antennæ angular. Palpi 2, long, like Antennæ. Legs very long. Eyes on the top of the Head or Thorax. Head and Thorax both in one. Abdomen, above brown, beneath white.
2. Cancroides. *Scorpion Tick*. Antennæ cheliform. Thorax brown. Abdomen transversely striated. On garden pots; and sometimes in houses.

ARANEA. *Spiders*. Legs 8. Eyes 8.

1. Diadema. Abdomen gibbous, red-brown, brown,

brown, with white spots in the form of a cross.

2. Cucurbitina. Abdomen gibbous, green-yellow, with black spots. On fruit trees. *Raj.* 20. 5.
3. Domestica. Abdomen pale brown, with 5 black spots. Somewhat hairy.
4. Labyrinthica. Thorax grey, with 3 longitudinal lines. Abdomen brown, with a longitudinal pinnated line. Tail forked. Large. In fields.
5. Redimita. Abdomen oval, pale yellow, with a crimson oval crown or ring on the Back. Legs long, white, transparent. In gardens.
6. Montana. Abdomen with grey spots; sides white. Thorax and Legs pale. Fore feet long, extended.
7. Extensa. Abdomen long, green-silver. Legs livid, long, extended.
8. Holosericea. Brown-livid, hairy. Abdomen ovato-oblong, with 2 truncated appendices, and 2 yellow tubercles beneath.
9. Senoculata. Eyes only 6. Yellowish, downy. Abdomen sub-cylindrical, with quadrangular black spots on the anterior part, and yellow lines on the sides. Large. On walls, &c.
10. Scenica. Black, covered with short silvery hair. Abdomen sub-cylindrical, with 3 oblique white lines on each

each side. Legs short, hairy, black and white. Skips. On old walls and windows. Weaves no web.

11. Aquatica. Pale brown. Abdomen oval. Jaws black, large, strong. Length 5 lines. In lakes. Lives and hunts at the bottom of the water, devouring its food within a globule of air formed by itself. *Vide Geoffroy*, 645. 7.
12. Viatica. Thorax black-brown. Abdomen large, yellow, with 2 brown spots. Four fore legs long, black and yellow; 4 hind legs short. Resembles a Crab. Moves slow. Length $2\frac{1}{2}$ lines.

CANCER. Legs 10; first pair claws, or pincers. Tail foliated.

1. Pagurus. *Common Crab*. Tail short. Ends of the claws black.
2. Araneus. *Sea Spider*. Tail short. Thorax hairy, tuberculated, oval. Beak bifid. Claws slender. *Mer. Pin.* 192.
3. Bernhardus. *Bernard the Hermit*. Tail long, soft. Right claw largest. Length $2\frac{1}{2}$ inches. Lodges in the deserted habitation of Welks and other shell-fish. *Dale Harw.* 436. *Mer. Pin.* 192.
4. Gammarus. *Lobster*.
5. Astacus. *Crayfish*.
6. Squilla. *Shrimp*.

7. Pulex.

7. *Pulex*. *Sea Flea*. Yellow. Eyes black. Antennæ 4. Body of 12 segments. Legs 14. Length 7 lines.

8. *Salinus*. Body oblong, larger than a Louse. Eyes distant, lateral, pedunculated. Antennæ taper, shorter than the Body. Tail filiform, the length of the Body. Legs 10 pair. In the Lymington salt water.

MONOCULUS. Body covered with a crust, or shell. Feet made for swimming.

1. *Apus*. Greenish. Eyes 2, on the crown, contiguous. Body covered with 2 shells, or scales. Tail scaly, with 2 long hard bristles. Length 18 lines. In fish ponds and ditches.

2. *Pulex*. Greenish red. One Eye in the middle of the forehead. Snout pointed, and bent downwards. Antennæ forked, subdivided. Body compressed and covered with a firm shell. Tail bifid, subdivided. Very minute. Frequent and numerous in stagnant water.

3. *Quadricornis*. Grey-brown. One Eye. Antennæ 4. Body diminishes towards the Tail, which is long and bifid, with 3 or 4 strong hairs on each side. A bag of eggs on each side of the Tail. Length half a line.

4. *Con-*

4. Conchaceus. Inclosed in, a bi-valve ash-coloured Shell, from the aperture of which it puts forth a number of capillary Antennæ, which it retracts when taken out of the water. Length $1\frac{1}{2}$ line. In ponds and ditches.

3. *Asellus* *islandicus* *islandicus*

ONISCUS. Legs 14. Antennæ taper. Body oval.

1. Asilus. *Sea Louse*. Whitish. Abdomen covered with 2 Shells. Tail semioval

2. Entomon. *Sea Wood-Louse*. White. Eyes black. Convex above, beneath flat, margin acute. Antennæ 4. Four hind pair of legs largest, hairy. Body of 7 segments. Length $1\frac{1}{4}$ line. On the coast.

3. Aquaticus. Ash-colour. Antennæ taper, of 3 joints. Body of 7 segments. Tail roundish, with 2 bifid appendices. Hind legs longest. Length 2 lines. In clear springs.

4. Asellus. *Millepes*, or *Wood-Louse*. Oval. Tail obtuse, with 2 undivided bristles. Various as to colour. Length 5 lines.

5. Armadillo. Black, oval, broad, polished. Body of 10 segments, the edges of which are white. Tail obtuse, without appendices. On being touched forms itself into a pearl. Under stones.

SCOLO-

SCOLOPENDRA. Feet not less than 24.
Antennæ taper. Palpi 2, jointed. Body
depressed.

1. Lagura. Feet 24. Body oval,
brown. Head black. On each side 9
tufts of hair. Tail a white pencil.
Length $1\frac{1}{4}$ line. Under the bark of
old trees.

2. Forficata. Feet 30. Segments 9.
Tawny, smooth. Antennæ of 42 joints.
Length 1 inch. Runs swift. Under
stones.

3. Electrica. Feet 140. Very flat.
Tawny, with a black longitudinal line
on the Back. Segments 70. Joints of
the Antennæ 17. Shines in the dark.

JULUS. Feet, on each side double the
number of the segments of the Body.
Antennæ beaded. Palpi 2, jointed.
Body semicylindrical.

1. Terrestris. Feet 200. Black, po-
lished. Length 5 lines. Under stones.
Geoff. 679.

2. Sabulosus. Feet 240. Ash-colour.

CLASS

CLASS VI.

VERMES.

No distinct Head, no Ears, no Nose; in general,
no Eyes, no Legs.

I. INTESTINA.

Naked, simple, without Limbs.

GORDIUS. Filiform, equal, smooth.

1. Aquaticus. Like a horse-hair. Ex-
tremities black. In water and in clay.
2. Lacustris. Plano-spiral, convoluted,
small at each end. In the liver of the
Pike.

ASCARIS. Cylindrical, filiform, small at
the ends.

1. Vermicularis. Pale red. Mouth
transverse. Tail much smaller than the
Head. Length half an inch. At the
bottom of lakes, and in the intestines
of children and horses.

2. Lum-

2. Lumbricoides. Tail somewhat angular. Length of the Earth-Worm. In human intestines.

LUMBRICUS. Cylindrical, annulated, rough. A broad fleshy belt. Lateral pores.

1. Terrestris. *Earth or Dew Worm.* Segments 100; 26 to 30 form the belt. Two spines on each side of each segment, except the belt, all turned backward. Three pores on each side of the belt, 2 on the 12th, and 2 on the 14th segment. In the ground, and in the human intestines.

2. Marinus. *Sea Worm.* From the middle forward are 14 or 15 segments, each composed of 4 or 5 small ones. On each side of these larger segments are 2 tubercles, with a small bristle in the center of each. Posterior half smooth, with irregular ringlets, and minute punctures.

FASCIOLA. Flat, with a terminal and ventral pore.

1. Hepatica *Gourd Worm.* Oval, sharp before. A whitish longitudinal line on the Back, with an oblong spot in the middle. Resembles the seed of the common Gourd. In ditches, rivulets, and in the liver of sheep.

2. In-

2. Intestinalis. Long, narrow, furrowed longitudinally, not jointed. In the intestines of fishes.
3. Barbata. White, oblong, size of a Cucumber-seed. Mouth with transverse papillæ. In the intestines of the *Sepia loligo*.

HIRUDO. Subcylindrical, truncated at each end.

1. Medicinalis. *Common Leech*. Smooth. Depressed, blackish, with 6 yellow lines on the back. In shallow waters.
2. Sanguisuga. *Horse Leech*. Brown, depressed; lateral margin yellow. In fresh water.
3. Geometra. Cylindrical. Black-brown. Extremities dilated. Length half an inch. In fresh water.
4. Muricata. *Sea Leech*. Covered with small tubercles. In the sea. *Dale Harw.* 393.

MYXINE. Cylindrical, with a ridge beneath. Mouth terminal. Jaws pinnated, with 1 tooth in the upper, and several in the under Jaw. No Eyes.

1. Glutinosa. Back black-green. Sides yellowish. Belly white. Size of the Dew Worm, and annulated. In the Sea.

II. MOLLUSCA.

Simple, naked, without Shell, but not entirely without Limbs.

LIMAX. Oblong. A common aperture on the right side. Tentacula 4, above the Mouth.

1. **Ater.** *Black Snail.* Back furrowed. Belly grey. Length 3 inches. In moist shady places.
2. **Rufus.** *Red Snail.* Back red-brown. Belly yellow. At the foot of mountains.
3. **Maximus.** *Large Grey Snail,* Deeply furrowed, striated, and spotted with brown. Largest of this genus. In thick woods, &c.
4. **Agrestis.** *Small Grey Snail.* Immaculate. Length half an inch. On Cabbages, &c.
5. **Elavus.** *Amber Snail.* With white spots. Length $1\frac{1}{2}$ inch. On plants.

APHRODITA. Body oval, with many Legs. Mouth terminal, cylindrical, retractile, with 2 taper tentacula.

1. **Aculeata.** *Sea Mouse.* Covered with hair, mixt with sharp prickles; that on the sides, blue-green-gold. Legs 72, with a fin to each foot. Length 4 inches. Breadth $1\frac{1}{2}$. Dale Harw. 394. Phil. Trans.

Transf. N°. 225. p. 405. Found at Dublin in the stomach of a Cod.

NEREIS. Body long, with lateral pencilled Tentacula. Mouth terminal, unguiculated.

1. Noctiluca. Segments 23. Scarce visible to the naked eye. Shines by night in the sea, so as to make the water seem on fire.
2. Acustris. Size of a small Bristle, pellucid, as if jointed, with a Foot on each side of each joint. In clayey water.

LERNÆA. Body oblong, cylindrical; Tentacula like arms or branches, with which it fixes to other animals.

1. Cyprinacea. Body issues from a sheath. Tentacula 4, 2 of which are lunated. Length half an inch. In fish ponds, adheres to the sides of Carp.
2. Salmonca. Body obovate. Thorax obcordate. Tentacula 2, filiform, as long as the Body. Ovaria at the end of the Abdomen, granulous, and as large as the whole Body. Adheres to the gills of Salmon.
3. Asellina Body lunated. Thorax cordate. Tail double, cylindrical. In the gills of Cod, &c.

SEPIA. Body fleshy, like a vagina or sheath, receives the Neck or Breast. Arms 8. Tentacula 2, very long. Mouth terminal, horny. Eyes? beneath the Arms.

1. *Officinalis. Ink or Cuttle Fish.* Arms pointed and covered on the inner side with tubercles. Tentacula broad at the end, and longer than the Body. Length 6 inches. In the sea.
2. *Loligo. Sea Sleeve.* Body angular, and pointed at the base. Arms narrower than in the former. Length 8 inches. *Dale Harw. 392.*

MEDUSA. Body gelatinous, orbicular, depressed. Mouth beneath, central. Inhabit the sea.

1. *Cruciata.* Margin entire. In the center a white cross. Diameter 1 inch.
2. *Aurita. Sea Nettle.* Convex above, concave beneath. Margin fringed. On the under Side 4 arched cavities surrounded by an opaque line, composed of more than 20 dots. On the upper surface pale veins.
3. *Capillata. Sea Lungs.* Orbicular, convex. Margin regularly divided into 16 segments.

ASTERIAS.

ASTERIAS. Form of a star. Depressed.
Mouth in the center.

1. Rubens. *Five Fingered Star Fish*. Reddish white. Above covered with soft spines. Beneath a quadruple row of papillæ. Diameter 5 inches. *Dale Harw.* 436. *Mer. Pin.* 191. Fossile, called *Shugborough Star Stone*.
2. Ophiura. Body, in proportion, broader, and rays, which are also 5 in number, much shorter than in the last species. *Dale Harw.* 436.

ECHINUS. Body roundish, covered with a bony crust, with moveable spines. Mouth beneath, of 5 valves.

1. Esculentus. *Sea Hedge-hog*. Shell hemispherical, bluish-red. Ten series of ambulacra or spines, with white points. Apertures roundish. Anus vertical. Diameter $1\frac{1}{2}$ inch. On the coast near Scarborough.
2. Spatagus. *Sea Egg*. Oval, compressed. From the center 4 radii, composed of 4 series of perforated punctures. Aperture of the Anus beneath. On the Yorkshire coast.

III. TESTACEA.

Inclosed in a hard shell, of one or more parts or valves, and moveable by the animal.

LEPAS. Shell of many unequal valves fixed at the base. Animal *Triton*.

1. Balanus. Shell conic, furrowed, fixed. Valves 4, pointed. On the sea-shore.
2. Balanoides. *Small Balanus, or Acorn fish.* Grey. Valves 6, striated, obtuse. Size of a nut. Frequently adheres to Oysters.
3. Tintinabulum. Shell conic, rough, obtuse, fixed. Like the last, but thicker.
4. Anatifera. *Barnacle.* Shell compressed, smooth, of 5 valves, 2 of which are larger than the rest. Fixed generally to old wood in the sea, by a pedicle, like a gut, about 1 inch in length.

PHOLAS. Shell bivalve, divaricated, with smaller irregular accessory valves at the hinge, which is recurved and connected by a cartilage. Animal *Ascidia*.

1. Dactylus. *Piddock.* Shell rough, striated longitudinally and transversely; shape irregular, the hinge nearer the end, which extends into a kind of beak. Length $2\frac{1}{2}$ inches. Breadth $1\frac{1}{2}$. In stones, particularly in the *Ludus Helmontii*. Shines by night.
2. Candidus. Shell oblong, rough, striated both ways, white, diaphanous, thin,

thin, fragile. Hinge nearest one end.
Length $1\frac{1}{4}$ inch.

3. Crispata. Shell divided transversely by a deep furrow; one half gibbous, striated, rough, with a long beak, the other plain, smooth, with a thin edge. Hinge with a curved tooth. Open at either end. Length $1\frac{1}{2}$ inch. Breadth $1\frac{1}{4}$. Frequent on the Yorkshire coast.

MYA. Shell bivalve, open at one end. Hinge with a broad thick tooth, not let into the opposite valve.

1. Truncata. Shape irregular, somewhat oval. Hinge obtuse. Length $1\frac{1}{2}$ inch. Breadth 1 inch. Often found in a fossil state. In the sea.
2. Pictorum. Oval. Pale green. Somewhat pointed. Hinge very near the obtuse end. Length $1\frac{1}{2}$ inch. Breadth $\frac{2}{3}$ inch. In rivers.
3. Margaritifera. Oval, black, thick, heavy. Tooth of the hinge, smooth, conic. Within whitish, with a double cicatrice. Length $5\frac{1}{2}$ inches. Breadth $2\frac{1}{2}$. In rivers.

SOLEN. Shell bivalve, oblong, open at each end. Hinge with a single, or double, conic bent tooth, not let into the opposite valve. Animal *Ascida*.

1. *Siliqua*. Brown, linear, strait, truncated at each end. Striated both ways, and a diagonal line. Hinge at one angle, connected by a membrane. Length 6 inches. Breadth not quite an inch. Frequent on the shore near Scarborough.
2. *Ensis*. Differs from the last in being much less, and a little curved.

TELLINA. Bivalve. In the fore part of one shell a convex, in the other a concave fold. Hinge of three teeth. Animal, *Tethys*.

1. *Trifasciata*. Oval, compressed, reddish-white, with 3 crimson rays from the hinge to the circumference. *Pubes* wrinkled, *Vulva* exserted. Length 1 inch. Breadth $\frac{2}{3}$ inch.
2. *Carnaria*. Suborbicular, smooth, reddish-white, obliquely striated. Within red. Length $\frac{3}{4}$ inch. Breadth $\frac{2}{3}$ inch. *Dale Harw.* 387.
3. *Cornea*. Globous, smooth, horn colour, with a transverse furrow. Size of a large pea. In pools of fresh water.

CARDIUM. Bivalve. Valves equal. Hinge with middle teeth alternate, lateral teeth remote, and let into a groove in the opposite valve. Shape of a heart. Animal *Tethys*.

1. Echinatum. White, with about 20 ridges, and a row of curved spines on each ridge. Breadth $1\frac{1}{2}$ inch. Length somewhat less. On the Yorkshire coast.

2. Edule. *Common Cockle*. Ridges 26.

MACTRA. Bivalve, inequilateral, equivalved. Middle tooth of the hinge complicated with an adjacent groove. Animal, *Tethys*.

1. Solida. Opaque, subrotund. One valve convex, the other a little compressed. Yellowish white. Concentric curved transverse lines on the surface. Margin entire. Breadth $1\frac{1}{2}$ inch. On the Yorkshire coast.

DONAX. Bivalve. Anterior margin very obtuse. Hinge with 2 teeth. Animal, *Tethys*.

2. Trunculus. Within purple. Margin ferrated. Hinge nearest the small end. Striæ from the hinge, crossed by deep concentric transverse lines. From the hinge to the opposite margin half an inch. Breadth not quite 1 inch. On the coast near Scarborough.

VENUS. Bivalve. Anterior margin incumbent. Hinge with 3 teeth. *Fulva* & *Anus* distinct.

1. *Mercenaria*. Heart-shaped, thick, ponderous, smooth, with a few transverse striae. Margin serrated. Internal margin purple. *List Angl.* t. 8. f. 33.
2. *Borcalis*. Subrotund, thin, fragile and very shallow. Seven or eight concentric transverse curve lines, distant from each other. Diameter $1\frac{1}{4}$ inch.

OSTREA. Bivalve, inequivalve. Hinge without teeth, with an oval cavity. *Vulva anusque nulla*. Transverse striae.

1. *Maxima*. *Large Scallop*. Longitudinal ridges 14. One valve a little convex, the other plane. Auricles equal, rectangular, striated. Reddish, clouded. Diameter about 4 inches. On the Irish coast, and near Portland.
2. *Obliterata*. *Small Scallop*. Outside smooth, purplish red; inside yellowish purple, with 24 longitudinal double radii. Length $1\frac{1}{2}$ inch. *Dale Harw.* 383. On the beech near Landguard fort.
3. *Edulis*. *Common Oyster*.

ANOMIA. Bivalve; one gibbous at the base, the other plain, and less. Hinge without teeth. Fossile in this kingdom.

1. *Gryphus*. Oblong, smooth. The under shell is considerably curved upwards

wards near the hinge. Length $2\frac{1}{2}$ inches.

2. Pecten. Semiorbicular. On one valve many longitudinal striæ. These shells, or impressions of them, are found in black stones in coal mines. Breadth 1 inch.
3. Truncata. Auriculæ large. Longitudinal striæ extremely fine and numerous. Hinge straight. Length half an inch; breadth $\frac{2}{3}$. In limestones.
4. Crispa. Subtriangular, rough, plicated, the middle fold larger and deeper than the rest. On one side a kind of beak or point. Diameter 1 inch. In bluish lime-stone, in Craven and other parts.
5. Lacunosa. Size of a large hazelnut, of 3 lobes. Valves plicated at the apex. One valve with deep cavities, tridentate at the apex.
6. Terebratula. Rounded at one end, and sharp at the other. One valve with 3 folds, the other with 2. Length near 1 inch.
7. Spinosa. With spines as long as the shell.

MYTILUS. Bivalve, rough, generally fixed to the *Bissus*. Hinge without teeth, distinct, with a subulated hollow longitudinal line.

1. Litho-

1. *Lithophagus*. White, glossy, fossil, filled with a yellow earthy stone. Length 2 inches. Thick half an inch.
2. *Rugosus*. Rounded at one end, and truncated at the other. A line parallel with the margin. Length 1 inch. Breadth half an inch.
3. *Edulis*. *Common Muscle*.
4. *Cygneus*. Oval. Outside greenish, within silver-white. Both valves very thin, and in some degree transparent. Length 5 inches. Breadth $2\frac{1}{2}$. In many lakes in the North. *List. Angl. app. 9, t. 1, f. 3.*

CYPRÆA. A single shell, involuted, oval, obtuse, smooth. Aperture dentated, longitudinal. Animal *Limax*.

1. *Stolida*. *Northumberland Gowry*. Grey, with quadrangular brown spots on each side. Size of a Sparrow's egg.

BUCCINUM. A single shell, spiral, gibbous. Aperture oval, ending in a dexter cavity. Lip expanded on the inner side. Animal *Limax*.

1. *Lapillus*. *Larger English Purple Fish*. Whitish, thick, ponderous. Volutions 5. Aperture not large. Lips thick, serrated. Beak short, notched. Length $4\frac{1}{2}$ inch. On the shore.

2. Un-

2. Undatum. Thick, ponderous ; outside reddish brown ; within reddish white. Volutions 7, longitudinally waved, transversely striated. Aperture large. Length 3 inches.

MUREX. A single shell, spiral, rough. Aperture ending in a straight canula. Animal *Limax*.

1. Corneus. *Long Welk.* Thick, strong. Volutions 8, striated parallel with the volutions. Beak long. Length 2 inches. On the coast.

TROCHUS. A single shell, spiral, sub-conic. Aperture somewhat angular or roundish, narrow at the top. Columella oblique.

1. Pharaonius. *Top Shell, or Venus Bugle.* Umbilicated, oval, striated ; with alternate black and white spots in transverse rows. Aperture and umbilicus dentated. *Dale Harw.* 381. 4.
2. Cornulus. *Small Umbilicated Top Shell.* Size of a waistcoat button. Transversely waved and striated with brown. Volutions 5, with a raised line or cord between. On the East coast. *Dale Harw.* 381.
3. Zizyphinus. *Pyramidal Sea Snail.* White, with reddish spots in the middle of each revolution.

volution. Somewhat like the last, but without cord. *Dale Harw.* 380.

TURBO. Shell single, spiral. Aperture orbicular, contracted, entire. Animal *Limax*.

1. *Littoreus*. *Periwinkle*. Volutions 5, striated.
2. *Duplicatus*. White, pyramidal, like a screw. A double ridge along the middle of the volutions, which are about 12 in number. Length 3 inches.
3. *Perversus*. Yellowish white, thin. Volutions 7, contrary, i. e. from right to left. Length $\frac{1}{3}$ inch. Near the trunks of old trees.
4. *Muscorum*. Oval, yellowish, pellucid. Volutions 6. Aperture compressed, narrow. Length $\frac{1}{4}$ inch. On old moss-grown walls.

HELIX. *Snails*. Shell single, spiral, sub-diaphanous, fragile. Aperture contracted, subrotund, lunated on the inner side. Animal *Limax*.

1. *Lapicida*. Brown or horn colour, convex on both sides. Volutions 5, with transverse reddish striæ. Apex a little prominent, perforated. Margin of the volutions sharp. Aperture large, oval, transverse, and white within. Diameter $\frac{3}{4}$ inch. In woods in Lincolnshire.

2. Pla-

2. Planorbis. Brown. Both sides convex. Volutions 4; with a prominent sharp margin. Aperture oval, oblique, circumscribed. Diameter $\frac{2}{3}$ inch. In rivulets.
3. Vortex. Black-brown. Volutions 5. Diameter $\frac{1}{3}$ inch. Aperture not circumscribed; otherwise like the former.
4. Cornea. Brown, with very minute raised striæ. Volutions 4. Concave on both sides. Diameter 1 inch. Snail has red horns, and emits a crimson liquor. In still rivers and pools.
5. Pomatia. Ash colour. Volutions 5. Aperture somewhat lunar, reflexed, with a deep external sinus on the left side. Size of a Pigeon's egg. In the South. Eaten in France.
6. Arbuſtorum. Yellow, spotted or marbled with white. Volutions 5, with a single grey belt along the middle. Aperture lunar, with a double margin. Middle size. In shady thickets.
7. Vivipara. Black-brown, with 2 or 3 brown belts. Volutions 5. Apex pointed. Aperture round, near which is a deep sinus. In still rivers and pools.
8. Nemoralis. *Common Garden Snail.* Colour various.

9. Stag-

9. Stagnalis. Yellowish, opaque, Volutions 6. Aperture very large, oval. Apex slender, pointed. Length $1\frac{1}{4}$ inch. In pools.
10. Putris. Yellowish, very thin. Volutions 3. Apex obtuse. Aperture large, oval. Length $\frac{3}{4}$ inch. In rivers and pools.
11. Tentaculata. Olive colour. Volutions 5. Aperture oval, closed by a valve, and the whole shell covered by an argilaceous crust. In rivers and pools.
12. Auricularia. Yellowish, pellucid. Volutions 4, the 3 lower very small. Aperture very large. Length 1 inch. In rivers and pools.

NERITA. Shell single, spiral, gibbous. Aperture semiorbicular; Lip transverse, truncated. Animal *Limax*.

1. Glaucina. *Sea Snail*. Reddish white, smooth, thick. Volutions 5; the first very large, the rest small, with 5 belts spotted with brown. Length not quite 1 inch. On the shore.
2. Fluviatilis. Greenish blue, thick, strong, reticulated, spotted. Volutions 2. Size of a small pea. In rivers.
3. Littoralis. Greenish brown, reticulated. Volutions 3. Apex a little promi-

prominent. Length $\frac{1}{2}$ inch. . . . On the sea shore. *List. Angl.* 164. t. 3. f. 13.

HALIOTIS. Shell single, auriform, flat; disk longitudinally perforated. Animal *Limax*.

3. Tuberculata. *Sea Ear*. Oval. Convex side reddish brown, with spiral ridges, and 6 or 7 round holes. Concave side mother of pearl. Length 4 inches; breadth $2\frac{1}{4}$ On the shore.

PATELLA. Shell single, subconic, not voluted. Animal *Limax*.

1. Vulgata. *Common Limpet, or Pap Shell*. Livid grey. Conic with 14 obsolete angles. Apex obtuse, and not in the center. From the apex to the edge $1\frac{1}{4}$ inch. Diameter of the aperture 2 inches. On the coast.
2. Lacustris. Oval, fragile, pellucid. Vertex pointed, reflexed. Diameter $\frac{1}{2}$ inch. In the rivers Air and Warf in Yorkshire.

SERPULA. Shell single, tubular, adhering to other bodies. Animal *Terebella*.

1. Spirorbis. Orbicular, spiral, regular. Volutions above inwardly subcaniculated, gradually less. Adheres to sea weeds on the coast.

SABELLA.

SABELLA. Tubular, composed of particles of sand united by a membrane. Animal *Nereis*.

1. Alviolata. *English tubular Sand Coral*. Composed of numerous cells. Animal half an inch long. On the Yarmouth coast.

IV. LITHOPHYTA.

Coral, calcareous, fixed, built by animals. Animal *Mollusca*, composite.

MADREPORA. Coral, with cavities lamelloso-stellated. Animal *Medusa*.

1. Muscalis. Fasciculated, with corals cylindrical, striated, distant, connected by numerous transverse membranes. On the Irish coast.

MILLEPORA. Coral, with turbinated cylindrical pores. Animal, *Hydra*.

1. Fascialis. *Stony foliaceous Coralline*. Membranaceous, of many branches, with a great number of oval pores on each surface. Found adhering to an Oyster-shell, on the coast of the Isle of Wight.
2. Polymorpha. Short, irregular ramifications of equal thickness in all parts, of a stony, chalky appearance; sometimes livid red. Near Falmouth, Isle of Man, Ireland.

CELLE-

CELLEPORA: Coral, submembranaceous, composed of round cells. Animal *Hydra*.

1. Pumicosa. Appears, in the microscope, like a pumice stone. Found on the Sickie Coraline, in irregular lumps like white sand tenaciously united.

V. ZOOPHYTA.

Stem vegetating, and changing into an animated flower, or efflorescent composite animal.

GORGONIA. Stem radicated, horny, continued, branching; base spreading and covered with a bark. Florets *hydræ*, proceeding from lateral pores.

1. Placomus. *Warted Sea Fan*. Like the branch of a crab tree, incrustated. Florets stellated, with 8 setaceous rays. On the Cornish coast.
2. Anceps. *Sea Willow*. Stem and branches compressed, with porous calcareous edges.
3. Flabellum. *Venus Fan*. Branches compressed on the inner side, and connected by intermediate network. Cortex yellow.

ALCYONIUM. Florets *Hydræ*, between the cortex. Epidermis vesicular, porous.

P 1. Digi-

1. *Digitatum*. *Dead-man's Hand*. Without stem, coriaceous, wrinkled, soft. When recent, covered with minute papillæ, with a star of 8 points on the top of each, and each point contains a polypus with 8 fingers. Frequently taken up by fishermen trawling for flat fish, on the Kentish coast.
2. *Schlosseri*. Subrotund, fleshy, livid, covered by a thin skin. Florets large, distinct, but little elevated, stellated with 6—10 points, and with a pore at the base. On the Cornish coast.
3. *Bursa*. *Sea Purse*. Subglobose, soft green.
4. *Ficus*. *Sea Fig*. Lobed like the lungs of animals. Dark olive, fleshy, smells disagreeably. Inside full of yellow particles. Surface covered with small stars of six rays. Near Sheerness.

החלטת הוועדה להקים את המוסד, תכניתו, מטרותיו, משימותיו, סגליו, מערכתו, וכלל הנהלתו, יישמו.

SPONGIA. Stem radicated, flexile, bi-
bulous. Pores on the surface respire
water.

1. *Oculata. Branched Sponge.* Branched, irregular, erect, fine, tender, transparent, yellow, interwoven, inosculating, compressed. On the coast.
2. *Dicotoma. Forked Sponge.* Green, erect, cylindrical, dicotomous, woolly, of a compact substance, tough. On the Cornish and Yorkshire coast.

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3. Lacus-

3. *Lacustris*. *Creeping Sponge*, with erect, cylindrical, obtuse branches. At the bottom of lakes in Westmoreland.

4. *Fluviatilis*. *River Sponge*. Green, erect, fragile, irregular, of many branches. In the Thames, Cam, &c.

FLUSTRA. Stem radicated, covered with cellular pores. Florets *Hydræ*, issuing from poriform cells.

1. *Foliacea*. *Broad-leaved Hornwrack*. Branched, foliaceous, membranaceous, flexile, spongy, with alternate arched cells on each surface. Horny when dry. On the coast.

2. *Truncata*. *Narrow-leaved Hornwrack*. Leaves truncated, and cells disposed in longitudinal lines.

3. *Pilosa*. *Irregular Spongy foliaceous Coralline*. Cells in the form of inverted cones; apertures spinous.

TUBULARIA. Stem radicated, filiform, tubular. Florets terminal, solitary.

1. *Indivisa*. *Tubular Coralline*. Like a bundle of oaten straws. Tubes distinct 5 or 6 inches long, filled with a reddish liquor, on the extremities of which are polypes with plumed crests.

2. *Ramosa*. *Small ramified tubular Coralline*. Axillæ twisted. On the extremity of the tubes are polypes, like those found in ditches by Mons. Trembley.

U 1. P 2 3. Fistu-

3. *Fistulosa. Bugle Coralline.* Tubular, jointed, progressively divaricated.
4. *Muscoides. Tubular wrinckled Coralline.* Composed of a number of horny, elastic, single tubes, 1 or 2 inches long, and about the thickness of a fine straw. A crimson polypus on the extremity of each.
5. *Campanulata.* Creeping, with campanulated tubes, and a crested polypus. Extremely minute.

CORALLINA. Stem radicated, jointed, thready, calcareous.

1. *Officinalis. Coralline of the Shops.* Fixed to rock and shells by stony joints. Stem pinnated by branches opposite to each other. Joints like part of an inverted cone a little compressed. Surface covered with minute circular cells. Colour various when recent, but constantly white when dry.
2. *Rubens. Crested or Cock's-comb Coralline.* Like moss growing in round tufts, resembling a bird's crest, spread flat on each other. White, red, or green. The microscope shews the filaments to be dichotomous.
3. *Corniculata. White slender jointed Coralline.* Dichotomous, pinnated below, with a kind of horn on each side of the tops of the lower joints. Adheres to small Fuci.

SERTU-

SERTULARIA. Stem radicated, fibrous, naked, jointed. Florets *Hydræ*, one at each joint.

1. Rosacea. *Lilly flowering Coralline*. Branches alternate, with truncated opposite denticles, and vesicular florets like the flowers of the lilly. On Oysters.
2. Pumila. *Sea Oak Coralline*. Branches irregular. Denticles in pairs, opposite, with curved points. Vesicles irregular. Polypes on the extremity of both vesicles and denticles. This little creeping Coralline is found proceeding from small tubuli, on the broad leaved indented Sea Oak Fucus, about Sheerness.
3. Operculata. *Sea Hair*. Grows in thick tufts, the filaments of which lie upon the ground. Branches alternate. Vesicles resemble jars with covers.
4. Tamarisca. *Sea Tamarisk*. Branches alternate. Denticles opposite. Vesicles shaped like a top, with a short tube in the center. In deep water at the entrance of the harbour of Dublin.
5. Abietina. *Sea Fir*. Root wrinkled, tubular. Stems stiff, horny. Branches alternate. Denticles alternate, with narrow mouths. Vesicles oval, with narrow necks. On Oysters, Muscles, &c.
6. Cupressina. *Sea Cypress*. Denticles subacute, and closely united to the stem. Branches long, thin. Vesicles bidentate.

- *Argentea. Squirrel's Tail.* Erect, with thick tufts of alternately denticulated branches. Denticles pointed and curved inwards. Vesicles like jars. On Oysters, in the isle of Sheppy.
7. *Rugosa. Snail-trefoil Coralline.* Roots irregular, creeping, tubulous, adhering to the narrow-leaved Hornwrack. Branches irregular. Denticles alternate, transversely furrowed, and shaped like the cones of the Fir. Vesicles of the same shape, but with 3 sharp Teeth on the top. Near Brighthelmstone.
8. *Halecina. Herring-bone Coralline.* Erect, tubular, pinnated. Denticles alternate, obsolete. Vesicles oval. Resembles the spine of a Herring.
9. *Thuja. Bottle-brush Coralline.* Arises from horny tubuli, firmly adhering to Oysters. Stem zigzag, branched at the top. Branches forked. Denticles close to the branch. Vesicles at the bottom of the branches, oval, covered. On the northern coast.
10. *Myriophyllum. Pheasant's-tail Coralline.* Root spongy. Stem gibbous on one side, and feathered on the other. Denticles like cups, all on one side of the pinnæ. Height 10 or 12 inches. In deep water on the Irish coast.
11. *Falcata. Sickle Coralline.* Adheres to rocks by wrinckled tubés. Stem waved. Branches pinnated and curved. Denticles

icles on one side of the pinnæ. Vesicles like jars. On the Kentish coast.

12. Pluma. *Podded Coralline*. Like the last, except that the denticles are shaped like the flowers of the Lilly of the valley. From the branches arise little pods, incircled with studded ribs. On Muscles, &c. near Dublin.

13. Antennina. *Lobster's-horn Coralline, or Sea Beard*. Branches alternate, straight. Denticles verticillated, quatern, bearded. Vesicles verticillated, with the aperture oblique.

14. Verticillata. *Horse Tail*. Branches alternate. Denticles obsolete. Vesicles on twisted foot-stalks, shaped like cups, verticillated; cups denticulated round the brim. Near Whitehaven.

15. Volubilis. *Small climbing Coralline*. Vesicles like bells on the summit of long slender stems, twisted round other Corallines.

16. Syringa. Twisted stems, much shorter than the last. Cups cylindrical. Adheres to the Sea-fir Coralline.

17. Cuscuta. *Climbing Dodder-like Coralline*. Stems no thicker than hair. Branches opposite, simple. Vesicles oval, axillary. On the Podded Fucus.

18. Uva. *Grape Coralline*. Extremely minute. The microscope shews clusters of oval

vesicles like grapes attached to the stem; these are polypes.

19. *Lendigera*. *Nit Coralline*. Stem jointed. Vesicles cylindrical, arranged like organ pipes on one side of the stem. Minute. Climbs on *Fuci*, &c.
20. *Geniculata*. *Knotted-thread Coralline*. Stem waved, jointed. Denticles alternate, contorted. Vesicles alternate, like jars with a cover. Adheres to *Podded Fucus*. Dover, Harwich.
21. *Dichotoma*. *Sea-thread Coralline*. Stem no thicker than a fine thread, zigzag, jointed, tough, pliant, with ringlets at each joint, and a twisted foot-stalk, each supporting an oval vesicle, some closed, and others open at the top. On the south-west coast.
22. *Spinosa*. *Silk Coralline*. Stem composed of silky threads, zigzag, with short forked branches. Irregular rows of pores on one side of the branches. Adheres to stones.
23. *Pinnata*. *Sea Bristle*. Stem jointed. Branches alternate, capillary, denticulated. Vesicles shaped like Olives. Grows on *Muscles*, like stiff bristles, which, when dried, bend all one way.
24. *Polyzonias*. *Great Teeth Coralline*. Denticles large, oval. Vesicles transversely striated. Stem slender, twisted. On *Muscles*.

25. *Liche-*

25. *Lichenastrum*. *Sea Spleenwort*. Stem upright, jointed, compressed, denticulated. Branches straight, alternate, denticulated. Denticles alternate, obtuse, numerous, and close pressed to the branches. Near the harbour of Dublin.

26. *Bursaria*. *Shepherd's-purse Coralline*. Pearl colour. Branches irregular, with numerous denticles, like brackets, opposite. A figure like the head of a tobacco-pipe on the top of each denticle. Branches extremely fine. On Fuci.

27. *Loriculata*. *Coat of Mail Coralline*. Grows in large thick tufts. Stem and branches are composed of denticles or cells, opposite, and obliquely truncated at the top, which is broader than the bottom. Isle of Sheppy.

28. *Fastigiata*. *Soft-feathered Coralline*. Appears in its perfect state like the branch of a shrub, with many leaves or feathers. Branches forked. Denticles alternate, semicylindrical, pointed, with a black spot in the middle.

29. *Avicularia*. *Birds-head Coralline*. Like a feather about $1\frac{1}{2}$ inch long. Branches composed of cells with a sharp denticle on one side, and a globular vesicle like a bird's head, with the bill wide open. Very brittle. Near the harbour of Dublin.

30. *Scruposa. Creeping Stony Coralline.* Branches dichotomous, Denticles alternate, angulated, spinous.
31. *Repens. Creeping Coralline.* Branches dichotomous. Denticles alternate, bidentated. Adheres to shells.
32. *Ciliata. Ciliated Coralline.* Branches dichotomous, erect, with infundibuliform cells joined at their bases, and with wide mouths bearded on the upper lip.
33. *Eburnea. Tufted Ivory Coralline.* Branched. Cells arched, conjunct, gibbous, with a neck not in the center.
34. *Cornuta. Goat's-horn Coralline.* Branches alternate. Cells single, shaped like goats horns inverted, with a circular aperture, and a single upright hair near the top of each. Very minute.
35. *Loricata. Bull's-horn Coralline.* Branches alternate. Cells single, like inverted horns inserted into each other, with a short hair on the top of each. Very minute.
36. *Anguina. Snake Coralline.* Not branched. Stem an irregular tube, from which proceed, here and there, small oblong testaceous figures like snakes without the under jaw.

VORTICELLA. Stem fixed, vibrating the floret in a vortex. Floret with a vascular

vascular calyx : mouth contractile, ciliated, terminal.

1. Polypina. *Clustering Polypus Coralline*. When at rest appears like a bunch of grapes; but has a power of expanding into the form of a little tree bearing large pears, without leaves.
2. Anastatica Composite; florets numerous, campanulate. Stem rigescent. In fresh water, on shells and plants.
3. Cratægaria. Composite. Stem branched. Florets globous. Tentacula 2. In fresh water.
4. Opercularia. Composite. Stem branched. Florets oval. In fresh water.
5. Umbellaria Composite. Stem umbelled. Florets globous ciliated. In fresh water.
6. Convallaria. Simple, gregarious. Florets campanulate. In fresh water.
7. Urceolaris. Simple, pedunculated, mouth dentated. In lakes.

HYDRA. Stem not fixt to any particular substance. Gelatinous, with a single Floret. Mouth terminal, environed by several tentacula.

1. Viridis. Tentacula 10. Short. Green. In rivers.

2. Fusca.

2. *Fusca*. Brown. Tentacula 8. In fresh water.
3. *Grisea*. Grey. Tentacula 7. long. In clear fresh water.
4. *Hydatula*. Tentacula 4, obsolete. Like a pellucid bladder, with a cylindrical neck. In the abdomen of sheep, swine, mice, &c. between the peritoneum and the intestines.
5. *Stentorea*. Tentacula ciliated. Body infundibuliform. In fresh water.

TÆNIA. Body long, jointed, like a chain. Mouth and viscera to each joint.

1. *Solium*. Mouths marginal, one in each joint. In the intestines of various animals.
2. *Vulgaris*. *Common Tape Worm*. Mouth lateral, 2 in each joint. In the intestines of men and brutes.

GENE-

GENERA, &c.

A BDOMINALES. — 78	Cancer. — 185
Acarus. — 182	Canis. — 2
ACCIPITRES. — 10	Cantharis. — 104
Acipenser. — 64	Capra. — 7
Alauda. — 45	Caprimulgus. — 58
Alca. — 26	Carabeus. — 109
Alcedo. — 19	Cardium. — 198
Alcyonium. — 209	Cassida. — 92
Ammodites. — 68	Cellepora. — 209
Ampelis. — 49	CETE. — 8
AMPHIBIA. — 59	Cerambix. — 102
Anarchichas. — 68	Certhia. — 20
Anas. — 21	Cervus. — 6
Anguis. — 61	Charadrius. — 39
Anomia. — 200	Chrysis. — 167
ANSERES. — 20	Chrysomela. — 94
Aphis. — 124	Cicada. — 116
Aphrodita. — 192	Cicindela. — 106
Apis. — 168	Cimex. — 119
APODES. — 67	Clupea. — 82
Aptera. — 180	Cobitis. — 78
Ardea. — 33	Coccinella. — 93
Ascaris. — 189	Coccus. — 127
Asilus. — 178	COLEOPTERA. — 85
Asterias. — 195	Coluber. — 60
Attelabus. — 101	Columba. — 45
	Colymbus. — 29
Balæna. — 8	Conops. — 178
Blatta. — 114	Coracias. — 17
Blennius. — 72	Corallina. — 212
Bos. — 7	Corvus. — 16
Buccinum. — 202	Cottus. — 73
Bumbylius. — 179	Cuculus. — 18
Buprestis. — 107	Culex. — 177
Byrrhus. — 90	Curculio. — 97
Callionymus. — 69	Cyclop-

Cyclopterus.	—	65	Hæmatopus.	—	40
Cynips.	—	161	Haliotis.	—	207
Cypræa.	—	202	Helix.	—	204
Cyprinus.	—	82	Hemerobius.	—	160
Delphinus.	—	9	HEMIPTERA.	—	114
Dermestes.	—	88	Homo.	—	1
DIPTERA.	—	170	Hippobosca.	—	179
Donax.	—	199	Hirudo.	—	191
Dytiscus.	—	108	Hirundo.	—	57
Echinus.	—	195	Hister.	—	90
Elater.	—	105	Hydra.	—	219
Emberiza.	—	50	HYMENOPTERA.	—	161
Ephemera.	—	158	Ichneumon.	—	164
Equus.	—	7	INTESTINA.	—	189
Erinaceus.	—	4	JUGULARES.	—	69
Esox.	—	81	Julus.	—	188
Falco.	—	10	Labrus.	—	75
Fasciola.	—	190	Lacerta.	—	59
Felis.	—	2	Lampyrus.	—	104
FERÆ.	—	2	Lanius.	—	15
Flustra.	—	210	Larus.	—	30
Forficula.	—	113	Lepas.	—	196
Formica.	—	169	LEPIDOPTERA.	—	128
Pringilla.	—	51	Lepisma.	—	180
Fulica.	—	41	Leptura.	—	103
Gadus.	—	69	Lepus.	—	4
GALLINÆ.	—	42	Lernæa.	—	193
Gasterosteus.	—	76	Libellula.	—	156
Gobius.	—	72	Limax.	—	192
Gordius.	—	189	LITHOPHYTA.	—	208
Gorgonia.	—	209	Lophius.	—	64
GRALLÆ.	—	33	Loxia.	—	49
Gryllus.	—	114	Lucanus.	—	88
Gyrinus.	—	90	Lumbricus.	—	190
			Mastra.	—	199
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Mādrepora.	208	Pediculus.	181
MAMMALIA.	1	Pelecanus.	28
Medusa.	194	Perca.	75
Meloe.	112	Petromyzon.	61
Mergus.	25	Phalangium.	183
Millepora.	208	Phalæna.	139
MOLLUSCA.	192	Phasianus.	43
Monoculus.	186	Phoca.	2
Mordella.	112	Pholas.	196
Motacilla.	53	Phryganea.	159
Mögil.	81	Physeter.	8
Mullus.	77	Pica.	16
Murex.	203	Picus.	18
Mus.	5	Pleuronectes.	74
Musca.	173	Podura.	180
Muscicapa.	53	PRIMATES.	1
Mustela.	3	Procellaria.	27
Mya.	197	Prinus.	89
Mytilus.	201	Pulex.	182
Myxine.	191		
NANTES.	61	Raja.	62
Nepa.	118	Rallus.	41
Nereis.	193	Rana.	59
Nerita.	206	Recurvirostra.	40
NEUROPTERA.	156		
Notonecta.	117	Sabella.	208
		Salmo.	79
Oniscus.	187	Sertularia.	213
Ostrea.	200	Scarabæus.	85
Otis.	42	Sciurus.	6
Ovis.	7	Scolopax.	34
		Scolopendra.	183
Panorpa.	161	Scomber.	77
Papilio.	129	Sepla.	194
Parus.	56	Serpula.	207
PASSERES.	45	Silpha.	91
Patella.	207	Sirex.	164
Pecora.	6	Sitta.	19
		Solen.	197
		Sorex.	

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Sphex. ——— 167	Tipula. ——— 171
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Spongia. ——— 210	Trigla. ——— 78
Squalus. ——— 62	Tringa. ——— 36
Staphilinus. ——— 112	Trochus. ——— 203
Sterna. ——— 32	Turbo. ——— 204
Strix. ——— 14	Turdus. ——— 47
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Sus. ——— 7	Venus. ——— 199
Sygnanthus. ——— 65	VERMES. ——— 189
	Vespa. ——— 167
Tabanus. ——— 177	Vespertilio. ——— 1
Tænia. ——— 220	Vorticella. ——— 218
Talpa. ——— 4	Upupa. ——— 20
Tellina. ——— 198	Ursus. ——— 3
Tenebrio. ——— 111	
Tenthredo. ——— 162	Yunx. ——— 18
Termes. ——— 181	
Testacea. ——— 195	Zeus. ——— 73
Tetrodon. ——— 65	ZOOPHYTA. ——— 209
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A berdavine. — 51	Bull-head. — 73
Acorn-fish. — 196	Bunting. — 50
Admiral. — 133	Bustard. — 42
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Ant. — 169	Butterflies. — 129
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Afs. — 7	Buzzard. — 13, 12, 11
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Awk. — 27, 26	Cabbage Butterfly. — 129
	Carp. — 82
Badger. — 3	Cat. — 2
Barble. — 82	Cat-fish. — 63
Barnacle. — 22, 196	Cod. — 70
Basse. — 76	Cockle. — 199
Bat. — 1	Cock of the mountain. 43
Bee. — 168	Cock of the wood. — 43
Beetle. — 85, &c.	Cockpaddle. — 65
Bernard the hermit. — 185	Coldfinch. — 55
Bittern. — 33	Cole-fish. — 71
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Black-game. — 43	Coot. — 41
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Bleak. — 84	Coralline. 211, 212, 208,
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Boat-fly. — 117	Corvorant. — 28
Bounce. — 63	Chaffinch. — 51
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Bream. — 84	Chatterer. — 49
Breeze. — 170	Cheven. — 83
Buck. — 6	Chub. — 83
Bug. — 119	Clock. — 86
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Bull-comber. — 85	Crayfish. — 185
Bulfinch. — 49	Creeper. — 20
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Cricket. ———	115	Flaire. ———	62
Crossbill. ———	49	Flea. ———	182
Crow. ———	16	Flies. ———	173, 170
Cuckoo. ———	18	Flounder. ———	74
Cuckow-spir, insect. ———	116	Fly-catcher. ———	53
Curlew. ———	34	Foumart. ———	3
Cuttle-fish. ———	194	Fox. ———	2
		Fritillary. ———	134
Dab. ———	74	Frog. ———	59
Dace. ———	83	Frog-fish. ———	64
Dead-man's hand. ———	210	Froghopper. ———	116
Deer. ———	6	Froth-worm. ———	116
Diver. ———	29	Fulmar. ———	28
Dog. ———	2		
Dolphin. ———	9	Gad-fly. ———	170
Dor. ———	86	Gadwall. ———	23
Doree. ———	74	Gannet. ———	28
Dormouse. ———	5	Gar-fish. ———	81
Dotrel. ———	59	Garganey. ———	24
Duck. ——— 21, 22, &c.		Glow-worm. ———	104
Dun Diver. ———	25	Gnat. ———	177
Dung-hunter. ———	31	Goat. ———	7
Dunlin. ———	38	Goat-chaser. ———	102
		Goatsucker. ———	58
Eagle. ———	10	Godwit. ———	35, 36
Earwig. ———	113	Golden Eye. ———	23
Eel. ———	67	Goldfinch. ———	51
Eel-Pont. ———	71	Gowry. ———	202
Est. ———	59	Goosander. ———	25
Emperor. ———	132	Goose. ———	22
Ermine. ———	3	Grampus. ———	9
Erne. ———	11	Grasshopper. ———	115
		Grayling. ———	80
Falcon. ———	11, 13	Grebe. ———	29, 30
Father-lasher. ———	73	Greenfinch. ———	50
Fieldsare. ———	48	Greenshank. ———	35
Fincale. ———	83	Grey. ———	79
Fire-flaire. ———	62	Greenland Dove. ———	29
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Groundling. ———	79	Knot. ———	38
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Gudgeon. ———	83	Lady-cow. —	93
Guillemot. ———	29	Lamprey. —	61
Gull. ———	31	Land Rail. —	41
Gurnard. ———	78	Lanner. —	12
Gyr Falcon. ———	12	Lapwing. —	36
Haddock. ———	70	Lark. ———	46
Hake. ———	71	Launce. —	68
Hare. ———	5	Leech. ———	191
Hart. ———	6	Limpet. —	207
Hawfinch. ———	49	Ling. ———	71
Hawk. ———	13	Linnet. —	51, 52
Heath Cock. ———	43	Lizzard. —	59
Hedgehog. ———	4	Loach. ———	79
Hedge Sparrow. —	53	Lobster. —	185
Hen-Harrier. ———	11	Lough Diver. —	26
Heron. ———	33	Louse. —	181, 124
Herring. ———	82	Lumpfish. —	65
Hobby. ———	11	Lyre. ———	69
Hog. ———	8	Mackrel. —	77
Holibut. ———	74	Magpie. —	17
Hoopoe. ———	20	Maid. —	62
Hornet. ———	167	Mallard. —	25
Horn-fish. ———	81	Man. ———	1
Hornwrack. ———	211	Martin. —	3, 57
Horse. ———	7	Merlin. —	14
Horse-tail. ———	215	Mew. ———	31
Hound-fish. —	64, 63	Miller's thumb. —	73
Jackdaw. ———	17	Minime. —	83
Jacksnipe. ———	35	Minow-pink. —	83
Jay. ———	17	Missel bird. —	48
Ink-fish. ———	195	Mole. ———	4
Kestrel. ———	12	Morgay. —	63
Kingfisher. ———	20	Moths. —	139, 137
Kite. ———	11	Mountain finch. —	51
		Monk. ———	63

Moor Game. ———	44	Polecat. ———	3
Mouse. ———	5	Porpoise. ———	9
Mullet. ———	81	Ptarmigan. ———	44
Muscle. ———	202	Puffin. ———	27
Needle-fish. ———	66	Purple-fish. ———	202
Newt. ———	60	Purre. ———	39
Nightingale. ———	53	Piper. ———	78
Nutcracker. ———	17	QUADRUPEDS. ———	1
Nuthatch. ———	19	Quail. ———	44
Oister. ———	200	Rabbit. ———	5
Old wife. ———	75	Rat. ———	5
Orange-tip. ———	130	Raven. ———	16
Osprey. ———	12	Raw Pollock. ———	71
Otter. ———	3	Redbreast. ———	55
Ouzel. ———	48, 49	Red Eye. ———	84
Owl. ———	14	Red Game. ———	44
Ox. ———	7	Redshank. ———	35
Painted Lady. ———	132	Redstart. ———	55
Pap-shell. ———	207	Redwing. ———	48
Partridge. ———	44	Reed Sparrow. ———	50
Pearch. ———	76	Reeve. ———	36
Pearl. ———	75	REPTILES. ———	59
Periwinkle. ———	204	Rib. ———	70
Pettychaps. ———	53	Ring Dove. ———	45
Pheasant. ———	43	Roach. ———	83
Picked Dog. ———	63	Rock-fish. ———	73
Piddock. ———	196	Rockling. ———	71
Pigeon. ———	45	Roller. ———	17
Pike. ———	81	Rook. ———	16
Pilchard. ———	82	Rough-hound. ———	63
Penguin. ———	27	Rose Chaffer. ———	87
Pink. ———	83	Royal William. ———	129
Plaise. ———	74	Rud. ———	83
Poor. ———	70	Ruff. ———	76, 36
Plover. ———	40, 39	Salmon. ———	79
Pogge. ———	73	Salmon-trout. ———	79
		Sand	

Sand Eel. ———	68	Sea Wolf. ———	68
Sanderling. ———	40	Sea Wood-louse. —	187
Sandpiper. ———	37	Sea Serpents. ———	67
Scad. ———	77	Serpents. ———	60
Scallop. ———	200	Shad. ———	82
Scate. ———	62	Shag. ———	28
Sea Adder. ———	66	Shark. ———	63, 64
Sea Bream. ———	75	Shear-water. ———	28
Sea Calf. ———	2	Sheep. ———	7
Sea Crow. ———	31	Sheldrake. ———	21, 24
Sea Cypress. ———	213	Shelley. ———	80
Sea Devil. ———	64	Shoveller. ———	22
Sea Ear. ———	207	Shrew-mouse. ———	4
Sea Egg. ———	195	Shrimp. ———	185
Sea Fan. ———	209	Skua. ———	32
Sea Fig. ———	210	Smelt. ———	80
Sea Fir. ———	213	Smew. ———	26
Sea Flea. ———	186	Snail. ———	192
Sea Gudgeon. ———	73	Siskin. ———	51
Sea Hair. ———	213	Snake. ———	60
Sea Hedgehog. ———	19	Snipe. ———	34
Seal. ———	2	Soal. ———	74
Sea Lark. ———	72, 39	Soland Goose. ———	28
Sea Loach. ———	71	Sparrow. ———	52
Sea Louse. ———	187	Spiders. ———	183
Sea Lungs. ———	194	Sponge. ———	210
Sea Mall. ———	31	Sprat. ———	82
Sea Mouse. ———	192	Squirrel. ———	6
Sea Nettle. ———	194	Squirrel's tail. ———	214
Sea Owl. ———	65	Stag. ———	6
Sea Pie. ———	40	Star fish. ———	195
Sea Purse. ———	210	Stare. ———	47
Sea Sleeve. ———	194	Starling. ———	47
Sea Snail. 65, 206, 203		Stickleback. ———	76
Sea Spleenwort. —	217	Stint. ———	39
Sea Spider. ———	185	Stoat. ———	3
Sea Swallow. ———	32	Stock-Dove. ———	45
Sea Tamarisk. —	213	Stone Chatrer. ———	55
Sea Willow. ———	209	Stormfinch. ———	27
		Sturgeon.	

Sturgeon. —————	64	Water-flea. —————	90
Sunfish. —————	65	Water-hen. ——— 42, 41	
Surmullet. —————	77	Water Ouzel. ———	47
Swallow. —————	57	Water Rail. ———	42
Swan. —————	21	Waterwagtail. ———	54
		Wheat-Ear. —————	54
Tape-worm. ——— 220		Weaver. —————	69
Tarrock. —————	30	Weefel. —————	3
Teal. —————	25	Welk. —————	203
Tench. —————	83	Whale. —————	8
Tern. —————	32	Wimbrel. —————	34
Tewit. —————	36	Whinchat. —————	54
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DERIVATIONS.

ABDOMINALES. From *Abdomen*, the Belly. The 4th Order of Class IV. Fishes whose belly-fins are behind the pectoral. Page 78.

ACCIPITRES. From *Accipiter*, a Hawk. Birds of the Hawk kind. The 1st Order in Class II. Page 10.

AMPHIBIA. Class III. Page 59. The English word Amphibious is too generally understood to require explanation.

APODES. From *à priv.* and *πους, pes*, a foot. The 1st Order of Class IV. Containing those Fishes which have no belly-fins, which Linnæus considers as feet. Page 67.

APTERA. From *à priv.* and *πτερον, ala*, a wing. The 7th Order of Class V. Without Wings. Page 180.

BELLUÆ. From *Bellua*, a beast. The 6th Order of Class I. Page 7.

CETE. From *Κητος, Citus*, a Whale. The 7th Order in Class I. Page 8.

DIPTERA. From *διπλοσ, duplex*, double, and *πτερον, ala*, a wing. The 6th Order of Class V. Containing those insects which have two wings. Page 170.

FERÆ. From *Fera*, a wild beast. The 3d Order of Class I. Page 2.

GALLINÆ. From *Gallina*, a Hen. The 5th Order of Class II. Page 42.

GLIRES. From *Glis*, a Dormouse. The 4th Order of Class I. Page 4.

GRALLÆ. *Grallæ*, stilts. Having very long Legs.
The 4th Order of Class II. Page 33.

HEMIPTERA. From *ημισυς*, *dimidius*, half, and
πτερον, *ala*, a wing. The 2d Order of Class V.
Page 114.

HYMENOPTERA. From *υμην*, *membrana*, a mem-
brane, *πτερον*, *ala*, a wing. The 5th Order of
Class V. Page 161.

JUGULARES. From *Jugulum*, the Neck. The 2d
Order of Class IV. containing those Fishes whose
lower fins are in the neck, before the pectoral.
Page 69.

LEPIDOPTERA. From *λεπίς*, a scale or thin plate,
and *πτερον*, *ala*, a wing. The 3d Order of Class V.
Page 128.

LITHOPHYTA. From *λίθος*, *lapis*, a stone, and *εύ-
σις*, nature, substance. The 4th Order of Class VI.
Page 208.

MAMMALIA. From *Mamma*, a Pap, Breast or Dug.
The 1st Class of the Animal Kingdom, compre-
hending those which suckle their young. Page 1.

MOLLUSCA. *Mollusca*, a species of nut with a soft
shell. The 2d Order of Class VI. Page 192.

NEUROPTERA. From *νεῦρον*, *nervus*, a nerve, and
πτερον, *ala*, a wing. The 4th Order of Class V.
Page 156.

PASSERES. From *Passer*, a Sparrow. Order the 6th
of Class II. Page 45.

PECORA. From *Pecus*, a flock of sheep, &c. The
5th Order of Class I. Page 6.

PICÆ. From *Pica*, a Magpie. The 2d Order in
Class II. Page 16.

PRIMATES.

PRIMATES. From *Primas*, first in rank, most considerable. The 1st Order in Class I. Page 1.

TESTACEA. From *Tessa* a shell. The 3d Order of Class VI. Page 195.

THORACICI. From *Thorax*, the Breast, or that part of the body which contains the heart and lungs. The 3d Order of Class IV. Containing those Fishes whose ventral or belly fins are placed immediately under the pectoral fins. Page 72.

VERMES. From *Vermis*, a Worm. Class VI. Page 189.

ZOOPHYTA. From *Zōon*, an animal, and *φυσις*, nature, structure, &c. The 5th Order of Class V. Page 209.

END of VOL. I.

ERRATA.

Page 10 line 4. for Accipetres, read Accipitres

16 dele Frugilegus N°. 3.

192 for Mollusea, read Mollusca

Admiral. The 1st Order in Class 1. Page 1.
 President. From 1st Order in Class 1. Page 1.

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